



SPIXIANA

Zeitschrift für Zoologie

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(Insecta, Coleoptera, Carabidae)

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Gedruckt mit Unterstützung der Deutschen Forschungsgemeinschaft

SPIXIANA • Supplement 23 • München, 01. April 1997 • ISSN 0177-7424 • ISBN 3-931516-20-2

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herausgegeben von der

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Redaktion – Editor-in-chief
M. Baehr

Fotoarbeiten: M. Müller

Manuskripte, Korrekturen und Besprechungsexemplare sind zu senden an die

Manuscripts, galley proofs, commentaries and review copies of books should be addressed to

Redaktion SPIXIANA
ZOOLOGISCHE STAATSSAMMLUNG MÜNCHEN
Münchhausenstraße 21, D-81247 München
Tel. (089) 8107-0 – Fax (089) 8107-300

SPIXIANA – Journal of Zoology
published by
The State Zoological Collections München

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

[Spixiana / Supplement]
Spixiana : Zeitschrift für Zoologie / hrsg. von der Zoologischen Staatssammlung München.
Supplement. - München : Pfeil
Früher Schriftenreihe
Fortlaufende Beil. zu: Spixiana

Baehr, Martin:
Revision of the Pseudomorphinae of the Australian region / Martin Baehr. - München : Pfeil
(Spixiana : Supplement ; ...)
2. The genera Pseudomorpha Kirby, Adelotopus Hope, Cainogenion Notman,
Paussotropus Waterhouse and Cryptocephalomorpha Ritsema :
taxonomy, phylogeny, zoogeography ; (Insecta, Coleoptera, Carabidae)
(Spixiana : Supplement ; 23)
ISBN 3-931516-20-2

Gedruckt mit Unterstützung der Deutschen Forschungsgemeinschaft

Satz und Litho: Verlag Dr. Friedrich Pfeil, München
Druck: grafik + druck GmbH Peter Pöllinger, München
Buchbinder: Thomas, Augsburg

ISSN 0177-7424 – ISBN 3-931516-20-2

Printed in Germany

– Gedruckt auf alterungsbeständigem Papier –

Verlag Dr. Friedrich Pfeil, P.O. Box 65 00 86, D-81214 München, Germany
Tel. (089) 74 28 27 0 – Fax (089) 72 42 772 – E-Mail 100417.1722@compuserve.com



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Verlag Dr. Friedrich Pfeil • München, 01. April 1997 • ISSN 0177-7424 • ISBN 3-931516-20-2

Adelotopus rufozonatus, spec. nov. from near Edith Creek, far Northern Territory.



SPIXIANA	Supplement 23	1-508	München, 01. 04. 1997	ISSN 0341-8391	ISBN 3-931516-20-2

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Baehr, M. (1997): Revision of the Pseudomorphinae of the Australian Region 2. The genera *Pseudomorpha* Kirby, *Adelotopus* Hope, *Cainogenion* Notman, *Paussotropus* Waterhouse, and *Cryptocephalomorpha* Ritsema. Taxonomy, phylogeny, zoogeography (Insecta, Coleoptera, Carabidae). – Spixiana Suppl. **23**: 1-508

As the second part of a general revision of the Pseudomorphinae of the Australian, Oriental, and Aethiopian regions the genera *Pseudomorpha* Kirby, *Adelotopus* Hope, *Cainogenion* Notman, *Paussotropus* Waterhouse, and *Cryptocephalomorpha* Ritsema are revised.

The 117 valid species and additional 9 subspecies of *Adelotopus* are grouped in 26 species-groups each of which confidently represents a monophyletic unit. Keys are provided for the species-groups of the genus *Adelotopus*, for the species of the genera *Adelotopus*, *Cainogenion*, and *Cryptocephalomorpha*, and for the Australian species of the genus *Pseudomorpha*. For the latter species a new subgenus *Austropseudomorpha*, subgen. nov., and for the Argentinian and south Brazilian *Pseudomorpha laevissima* Chaudoir and *P. glabra* Ogueta a new subgenus *Notopseudomorpha*, subgen. nov. of the genus *Pseudomorpha* is erected. For *Cainogenion ephippiatum* (Newman) a new subgenus *Procainogenion*, subgen. nov. is erected.

Cainogenion cylindricum (Chaudoir) is transferred to *Paussotropus* Waterhouse and *Adelotopus insignis* Sloane is transferred to *Pseudomorpha* Kirby, subgenus *Austropseudomorpha*, subgen. nov.

Following species names are synonymized (valid name second): *Adelotopus bijugus* Darlington = *A. rufoguttatus* (Blackburn); *A. brunneus* Castelnau = *A. gyrinoides* Hope; *A. castaneus* Castelnau = *A. rubiginosus* Newman; *A. filiformis* Castelnau = *A. nemosomoides* Westwood; *A. longipennis* Macleay = *A. elongatulus* Macleay; *A. mastersii* Macleay = *A. dytiscides* Newman; *A. micans* Blackburn = *A. paroensis* Castelnau; *A. niger* Notman = *A. paroensis* Castelnau; *A. occidentalis* Castelnau = *A. gyrinoides* Hope; *Cainogenion bicolor* (Castelnau) = *C. ephippiatum* (Newman); *Paussotropus parallelus* Waterhouse = *Paussotropus cylindricus* (Chaudoir).

Adelotopus rufoguttatus (Blackburn) and *Cainogenion subopacum* (Macleay) have been revaluated from synonymy to full species status.

Lectotypes, and eventually paralectotypes, are designated for the following

* Supported by four travel grants and a grant for printing expenses of the Deutsche Forschungsgemeinschaft (DFG).

species (including those names synonymized in present work): *Pseudomorpha insignis* (Sloane), *Adelotopus analis* Macleay, *A. apicalis* Macleay, *A. bimaculatus* Macleay, *A. brevipennis* Macleay, *A. brunneus* Castelnau, *A. castaneus* Castelnau, *A. celeripes* Lea, *A. dytiscides* Newman, *A. elongatulus* Macleay, *A. fasciatus* Castelnau, *A. filiformis* Castelnau, *A. fortnumi* Hope, *A. gyrinoides* Hope, *A. haemorrhoidalis* Erichson, *A. laevis* Macleay, *A. linearis* Macleay, *A. longipennis* Macleay, *A.maculipennis* Macleay, *A. mastersii* Macleay, *A. micans* Blackburn, *A. nemosomoides* Westwood, *A. occidentalis* Castelnau, *A. paroensis* Castelnau, *A. politus* Castelnau, *A. rubiginosus* Newman, *A. rufoguttatus* (Blackburn), *A. tasmani* Blackburn, *A. vicinus* Castelnau, *A. zonatus* Castelnau, *Cainogenion bicolor* (Castelnau), *C. creberrimum* (Blackburn), *C. ephippiatum* (Newman), *C. ipsoides* (Westwood), *C. obscurum* (Castelnau), *C. subopacum* (Macleay), *Paussotropus cylindricus* (Chaudoir), *P. parallelus* Waterhouse, *Cryptocephalomorpha collaris* (Waterhouse), and *C. marginata* (Waterhouse).

A neotype is designated for *Adelotopus affinis* Castelnau.

The following 113 new taxa are described: *Pseudomorpha brevis*, spec. nov., *P. insignis pilosa*, subspec. nov., *P. subangulata*, spec. nov.; *Adelotopus adelaideae*, spec. nov., *A. adustus*, spec. nov., *A. aequus*, spec. nov., *A. angustatus*, spec. nov., *A. aterrimus*, spec. nov., *A. atrorufus*, spec. nov., *A. bacillus*, spec. nov., *A. bamagae*, spec. nov., *A. basirufus*, spec. nov., *A. bimaculatus angustior*, subspec. nov., *A. brevior*, spec. nov., *A. brittoni*, spec. nov., *A. browni*, spec. nov., *A. calvus*, spec. nov., *A. caniae*, spec. nov., *A. ciliatus*, spec. nov., *A. ciliatus tenuipunctatus*, subspec. nov., *A. clepsydra*, spec. nov., *A. conicollis*, spec. nov., *A. convexicollis*, spec. nov., *A. convexus*, spec. nov., *A. coriaceus*, spec. nov., *A. crassus*, spec. nov., *A. cribricollis*, spec. nov., *A. crucis*, spec. nov., *A. cuneatus*, spec. nov., *A. distinguendus*, spec. nov., *A. doyeni*, spec. nov., *A. dubius*, spec. nov., *A. dubius glaber*, subspec. nov., *A. dubius hobartensis*, subspec. nov., *A. edithae*, spec. nov., *A. flavescens*, spec. nov., *A. flavus*, spec. nov., *A. foliaceus*, spec. nov., *A. geminus*, spec. nov., *A. gibbosus*, spec. nov., *A. gippslandicus*, spec. nov., *A. grossepunctatus*, spec. nov., *A. gyrinoides orientalis*, subspec. nov., *A. houstoni*, spec. nov., *A. howdenorum*, spec. nov., *A. katherinei*, spec. nov., *A. kurandae*, spec. nov., *A. languidus*, spec. nov., *A. laticaudatus*, spec. nov., *A. laticollis*, spec. nov., *A. latior*, spec. nov., *A. latipalpis*, spec. nov., *A. lawrencei*, spec. nov., *A. longiformis*, spec. nov., *A. longus*, spec. nov., *A. longus tropicus*, subspec. nov., *A. lunatus*, spec. nov., *A. luteus*, spec. nov., *A. macilentus*, spec. nov., *A. mainae*, spec. nov., *A. marginicollis*, spec. nov., *A. minor*, spec. nov., *A. montisatri*, spec. nov., *A. montorum*, spec. nov., *A. multipunctatus*, spec. nov., *A. murrayanus*, spec. nov., *A. nigricauda*, spec. nov., *A. nitens*, spec. nov., *A. nitidior*, spec. nov., *A. obsoletus*, spec. nov., *A. ooldeae*, spec. nov., *A. ovatus*, spec. nov., *A. palumae*, spec. nov., *A. parumpunctatus*, spec. nov., *A. penelopeae*, spec. nov., *A. piceus*, spec. nov., *A. punctatissimus*, spec. nov., *A. puncticollis angustemaculatus*, subspec. nov., *A. punctulifer*, spec. nov., *A. queenslandicus*, spec. nov., *A. rufescens*, spec. nov., *A. rufocaudatus*, spec. nov., *A. rufomarginatus*, spec. nov., *A. rufozonatus*, spec. nov., *A. sedlaceki*, spec. nov., *A. semilunatus*, spec. nov., *A. seminitidus*, spec. nov., *A. sericeus*, spec. nov., *A. seriepunctatus striatus*, subspec. nov., *A. similis*, spec. nov., *A. sinuaticollis*, spec. nov., *A. sinuaticollis calliope*, subspec. nov., *A. sparsepunctatus*, spec. nov., *A. substriatus*, spec. nov., *A. ulrichi*, spec. nov., *A. unicolor*, spec. nov., *A. victoriensis*, spec. nov., *A. villosus*, spec. nov., *A. virgatus*, spec. nov., *A. yorkensis*, spec. nov., *A. zborowskii*, spec. nov.; *Cainogenion clypeale*, spec. nov., *C. creberrimum gnaltae*, subspec. nov., *C. depressum*, spec. nov., *C. glabratum*, spec. nov., *C. interiore*, spec. nov., *C. ipsoides occidentale*, subspec. nov., *C. parumpilosum*, spec. nov., *C. rotundicolle*, spec. nov., *C. tropicum*, spec. nov.; *Cryptocephalomorpha australica*, spec. nov., *C. genieri*, spec. nov., and *C. maior*, spec. nov.

Following six species remain doubtful, because the types are lost and the species belong to species-groups in which species distinction is impossible without comparison of the types: *Adelotopus aphodioides* Westwood, *A. cornutus* Castelnau, *A. hydrobioides* Westwood, *A. inquinatus* Newman, *A. papuanus* Gestro, and *A. scolytides* Newman.

First instar larvae are described for the first time from the oviducts of many species of the genera *Adelotopus*, *Cainogenion*, and *Paussotropus*. Their special characters are included in the phylogenetic analysis.

The possible relationships of the genera of Pseudomorphinae, the subgenera of the genus *Pseudomorpha*, the species-groups of the genus *Adelotopus*, and the species of the genera *Cainogenion* and *Cryptocephalomorpha* are discussed and described in cladograms based on a reconstructed phylogeny employing the methods proposed by Hennig. The phylogenetic relations of the species of *Adelotopus* and of *Pseudomorpha* are discussed. Phylogenetic evidence shows that *Sphallomorpha* is the adelphotaxon of all other genera, *Pseudomorpha* the adelphotaxon of the remaining genera, the highly specialized genus *Cryptocephalomorpha* presumably the adelphotaxon of the *Adelotopus*-lineage, in which *Adelotopus* is the adelphotaxon of *Cainogenion* + *Paussotropus*, whereas *Paussotropus* is the most evolved genus of this lineage.

There is strong evidence for an increasing grade of adaptation to myrmecophilous habits in Pseudomorphinae in general, but also within the larger genera. Whereas the general structure in *Sphallomorpha* and even still in *Pseudomorpha* may be rather adaptative to the subcorticolous life, this is reduced in favour of certain adaptations to myrmecophily in the other genera with *Paussotropus* and again *Cryptocephalomorpha* being most evolved in this respect. Comparable adaptations to myrmecophilous habits are also noted in the larvae of *Pseudomorpha*, *Adelotopus*, *Cainogenion*, and *Paussotropus*, while larvae of *Cryptocephalomorpha* are still unknown.

The distribution of the species is depicted in maps. About 25 distinct distribution patterns are distinguished and most of them may be regarded as related to faunistic subregions. Phylogenetic evidence shows that those species and species-groups that are plesiomorphic in many respects concentrate in the southeastern subregions of Australia, where also the most plesiotypic species of the genera *Sphallomorpha*, *Adelotopus*, *Cainogenion*, and *Pseudomorpha* subgenus *Austropseudomorpha* occur. Especially in the northeastern, northern, western, and central subregions a larger number of species shows a higher degree of apomorphic character states. This pattern of distribution is exemplified by several dichotomous and trichotomous vicariant relationships, in which the evolved vicariant(s) almost invariably occur(s) in the northern or western part of the common range.

Distribution of the apparent basal species of all genera either in southeastern Australia (*Sphallomorpha*, *Adelotopus*, *Cainogenion*, *Pseudomorpha* subgenus *Austropseudomorpha*), or in southern South America (*Pseudomorpha* subgenus *Notopseudomorpha*), or in South Africa (*Cryptocephalomorpha*) is evidence of a Gondwanaland origin of the subfamily without knowing the exact place of origin. Evidently most genera apart from *Cryptocephalomorpha* and perhaps *Pseudomorpha* originated in southeastern Australia or the adjacent part of Gondwanaland. *Cryptocephalomorpha*, however, is certainly a recent arrival in the Australian region that immigrated from the Oriental region, where it probably arrived drifting on terranes of the previous Sundaland. According to chorological, phylogenetic, and paleogeographic evidence the subfamily and most of its genera must have evolved at least during Upper Jurassic or even earlier.

The further history of the genera in Australia was comparable to that of *Sphallomorpha*, but their taxonomic radiation may have been even more recent than in the latter genus and it is certainly not yet finished. It occurred mainly in Pleistocene, synchronous with the late taxonomic diversification of eucalypts during the same period and generally in closer relation to ants. Several lineages of *Adelotopus* and *Cainogenion* then spread over most of Australia, mainly in an anticlockwise, northern and western direction. The repeated change of wet pluvials and dry interpluvials during Pleistocene, with their spreading of suitable plant communities (namely *Eucalyptus* forests or savannahs) and the subsequent isolation of these communities together with their Pseudomorphine hosts accounts for the high number of endemic and highly evolved species especially in the refugia of central eastern and northern Queensland, far Northern Territory, northwestern Australia, and central and southwestern Western Australia.

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Contents

1. Introduction

As the second part of the general revision of the pseudomorphine beetles of the Australian region the remaining genera *Adelotopus* Hope, *Cainogenion* Notman, *Paussotropus* Waterhouse, *Cryptocephalomorpha* Ritsema, and the Australian species of the genus *Pseudomorpha* Kirby are revised. For completeness the (few) South Asian species of *Adelotopus* and *Cryptocephalomorpha* and also the single, recently discovered African species of the latter genus have been included in this revision. Apart from the very large number of Australian species, the revision covers therefore some species from New Guinea, the Solomon Islands, Indonesia, the Philippine Islands, Vietnam, Thailand, Malaysia, and South Africa.

Since publication of the first part of this revision no important new opinions about the relationships of the subfamily Pseudomorphinae have been developed, because even the fine study of Arndt (1993) on the larval characters of Carabidae does not contain new ideas on the relations of the Pseudomorphinae, but only states their highly isolated status. However, there are new ideas to the phylogenetic relations within the subfamily Pseudomorphinae (Baehr 1994a) that will be referred to in the discussion of phylogeny and biogeographical history.

The number of species currently recognized are (Moore at al. 1987 for Australian, and Darlington 1968 for New Guinean species, both except for genus *Sphallomorpha*, and Baehr 1992a, 1993a, b, 1994b for genus *Sphallomorpha*): *Sphallomorpha*: 143 species and one additional subspecies; *Adelotopus*: 42 species; *Cainogenion*: 6 species; *Paussotropus*: 1 species; *Cryptocephalomorpha*: 3 species. Of the genus *Pseudomorpha* thus far no species from outside of the Americas were known.

2. Material

I have examined altogether 4581 specimens of *Adelotopus*, 941 specimens of *Cainogenion*, 36 specimens of *Paussotropus*, 76 specimens of *Cryptocephalomorpha*, 10 specimens of Australian *Pseudomorpha*, and additional 35 specimens of American *Pseudomorpha* from the collections of those institutions and individuals listed below and from my own collection. Of American *Pseudomorpha* the following species have been examined: *P. angustata* Horn, *P. argentina* Steinheil, *P. arrowi* Notman, *P. behrensi* Horn, *P. castanea* Casey, *P. champlaini* Notman, *P. excrucians* Kirby, *P. gerstaeckeri* Chaudoir, *P. glabra* Ogueta, *P. lacordairei* Dejean, *P. laevissima* Chaudoir, *P. pilatei* Chaudoir, and *P. vindicata* Notman.

3. Abbreviations of Collections mentioned in text

AMNH	American Museum of Natural History, New York
AMS	Australian Museum, Sydney
ANIC	Australian National Insect Collection, Canberra
ANSP	Academy of Natural Sciences, Philadelphia
BMH	B. P. Bishop Museum, Honolulu
BMNH	The Natural History Museum, London
CAS	California Academy of Sciences, San Francisco
CBM	Working collection M. Baehr, München
CBS	Collection V. Beysak, Sydney
CMC	Collection B. P. Moore, Canberra
CMP-WHC	Walford-Huggins Collection, Carnegie Museum, Pittsburg
CSB	Collection J. Sedlacek, Brisbane
CUIC	Cornell University Insect Collection, Ithaca
DEIB	Deutsches Entomologisches Institut, Eberswalde
DPIM	Department of Primary Industries, Mareeba
FMNH	Field Museum of Natural History, Chicago
FMT	Frey Museum, Tutzing, now München
HNMB	Hungarian National Museum of Natural History, Budapest
IRSNB	Institut Royal des Sciences naturelles, Bruxelles
MCSN	Museo Civico di Storia Naturale, Genova

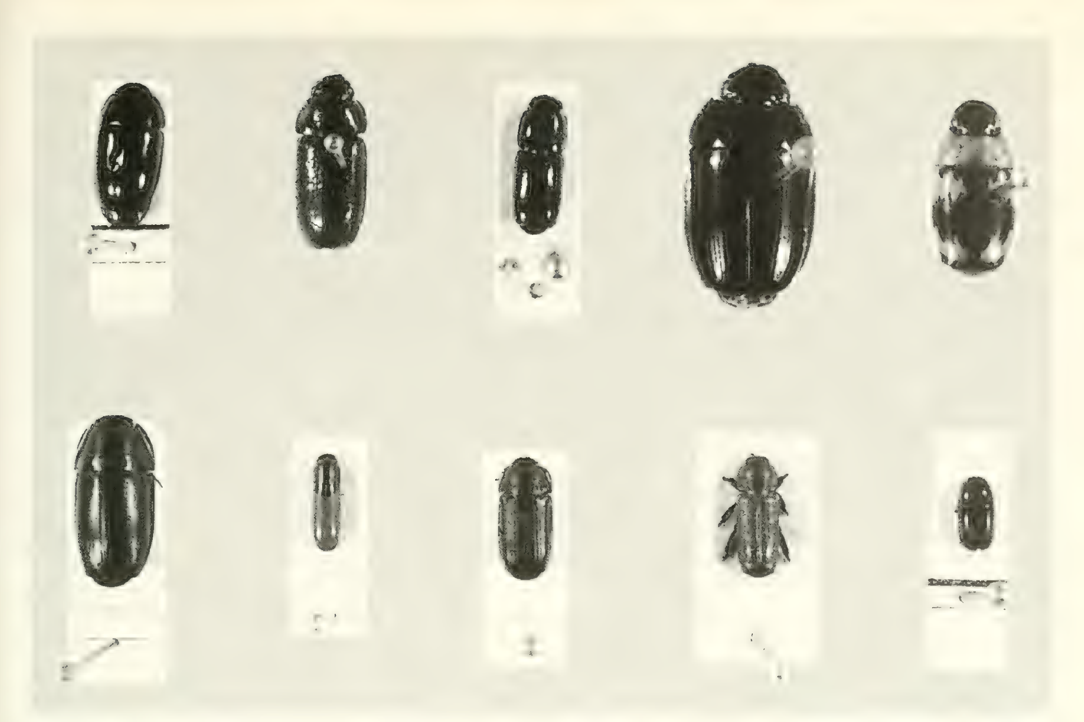


Fig. 1. Habitus of different Pseudomorphinae. Above, from left: *Pseudomorpha (Notopseudomorpha) laevissima* Chaudoir, *Pseudomorpha (Pseudomorpha) behrensi* Horn, *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane), *Sphallomorpha froggatti* (Macleay), *Sphallomorpha flavicollis* (Macleay). – Below, from left: *Adelotopus dytiscides* Newman, *Adelotopus linearis* Macleay, *Cainogenion* (s. str.) *obscurum* (Castelnau), *Paussotropus cylindricus* (Chaudoir), *Cryptocephalomorpha gaverei* Ritsema.

MCZ	Museum of Comparative Zoology, Cambridge/Mass.
MMS	Macleay Museum, Sydney
MNHB	Museum für Naturkunde der Humboldt Universität, Berlin
MNHN	Museum National de l'Histoire Naturelle, Paris
MNTD	Museum and Art Gallery of the Northern Territory, Darwin
NHMB	Naturhistorisches Museum, Basel
NHMW	Naturhistorisches Museum, Wien
NHRS	Naturhistoriska Riksmuseet, Stockholm
NMO	The Canadian Museum of Nature, Ottawa
NMV	Museum of Victoria, Melbourne
NNML	Nationaal Natuurhistorisch Museum, Leiden
OUM	Oxford University Museum, Oxford
QMB	Queensland Museum, Brisbane
SAMA	South Australian Museum, Adelaide
SMF	Senckenberg Museum, Frankfurt/M.
SMNS	Staatliches Museum für Naturkunde, Stuttgart
SMTD	Staatliches Museum für Tierkunde, Dresden
UASM	University of Alberta, Strickland Museum, Edmonton
UQIC	University of Queensland Insect Collection, Brisbane
USNM	United States National Museum, Washington, D.C.
UVB	University of Vermont Collection, Burlington
WAM	Western Australian Museum, Perth
ZSM	Zoologische Staatssammlung, München

4. Methods

4.1. Taxonomic principles

The taxonomic principles are basically the same as in the first part of this revision. However, in the genus *Adelotopus* the differentation of taxa is evidently even more difficult than in the genus *Sphallomorpha*, mainly due to more recent evolution and diversification of the genus as a whole and of many of its taxa, and to reduction or complete loss of certain important characters as for example chetotaxy. However, there has been considerable taxonomic radiation which led to groups of closely related taxa. Because of the known difficulties in recognizing subspecies from morphological evidence alone, those closely related taxa have been described generally as species if they are sympatric, and as subspecies, when they are evidently allopatric. It must be stressed, however, that the actual distribution of many taxa is very inadequately known, although a very large part of the specimens existing in the collections throughout the world have been examined. Hence, some closely related taxa that are regarded as allopatric subspecies at the present state of knowledge may be actually sympatric, and so their taxonomic status might have to be revised in future. On the other hand, many old, perhaps inaccurate or mislabelled locality records that seem to establish sympatric distribution of taxa, are perhaps wrong. As a consequence, those taxa may be actually allopatric.

In some groups of closely related taxa the distinction of taxa may thus appear rather artificial and perhaps readers do not agree with some of the taxonomic decisions made herein. I am aware that some of the taxa distinguished and named by me are disputable and may not be justified when other than morphological methods are applied. Nevertheless, I generally chose the attitude of a "splitter" when dealing with species or infraspecific units, but of a "lumper" at the generic level. I did so mainly for heuristic reasons, in particular to give users or later revisors the opportunity to trace without difficulties aberrant specimens or populations that likely would get lost in the material, when they would be regarded only as "variations". I feel that in some of these taxa morphological taxonomy is likely to have reached its limits and should be replaced by or supplemented with other methods.

With regard to genera, however, I adopt the term genus in a rather wide sense, on the same reasons as explained below (see chapter "Genera") and in the first part of the revision.

4.2. Phylogenetic principles

For the phylogenetic analysis I used the same methods as in the first part of this revision. They were proposed by Hennig (1966) and firstly adopted by Brundin (1966), and were for example further explained by Saether (1990). I did not choose the quantitative phyletic or (from my view) "numerical cladistic" approach, because I think character analysis must be the prior condition to construction of a phylogenetic tree and the criterion of parsimony to be used posteriorly to character analysis. I feel that parsimony may be perhaps not as important when tracing phylogeny as most propagators of that criterium believe, because evolution of species does not necessarily proceed according to that criterion, but commonly proceeds along roundabouts and so application of the principle of parsimony may easily generate fictitious results.

Moreover, I feel, that quantitative phyletic methods easily allude users to overestimate the value of certain rather weakly polarized or even unpolarized characters that would perhaps not be used when employing non-computerized cladistic methods. When such characters are introduced into the data matrix and used for establishing branchings in the cladogram, a sort of numerical analysis will be likely introduced into cladistics.

I will be even go as far as to say: morphological characters alone almost never can give the full set of synapomorphies necessary for settling all branchings in a cladogram, and moreover, many characters (ethological, ecological, physiological, genetical and others) important for tracking phylogenetic relatioships are missing when using such method. Therefore, I would like to stress that a cladogram based on a purely morphological analysis that supports **all** branchings with synapomorphies, should be a priori distrusted, at least in parts.

Although speciation occurs according to the rules of the biological species concept, in entomology at least, its observation under natural conditions is very rarely possible. Hence characters are needed as a means for distinction of species. Even when morphological structures are most widely used, other

characters may be of the same value, e.g. physiological, etho-ecological, cytological, or genetical. But even genetics yield only characters and hence do not solve the problem of applying the biological species concept to the distinction of species.

Because reconstruction of the phylogeny and history of the fauna or of a given superspecific taxon is primarily based on the acquisition of adaptations (i.e. characters), analysis of the ancestral or derivative status of characters is generally the only way to reconstruct phylogeny. As Hennig demonstrated, only derivative (apomorphic) character states are useful in such phylogenetic classification, because they alone define monophyletic groups and can be used to establish sister group relations.

As a first step towards a phylogenetic classification and analysis of faunal history the attempt is made to determine the state of the used characters. Character analysis, i. e. decision about plesiomorphy and apomorphy of characters, is based either on outgroup comparison using character states found in related taxa of higher categories as explained by Wiley (1981) and Watrous & Wheeler (1981), or on group trends as explained by Ross (1974), especially when strictly synapomorphic states were difficult to perceive because of ample parallelisms or reductions of characters. So it will be noted especially in the phylogenetic analysis of the species-groups of *Adelotopus* and of the phylogenetic relations within these species-groups that commonly evolutionary trends only can be traced, rather than well founded sister group relations. However, outgroup comparisons beyond the limits of Pseudomorphinae are difficult due to the highly isolated and yet unsettled position of this subfamily. In few characters, where outgroup comparisons do not yield good results, the somewhat questionable principle of "common occurrence" was used which usually supports the plesiomorphic status of a character. Its value, however, is questioned (Watrous & Wheeler 1981).

In the following text "plesiomorphic" or "apomorphic" is attributed to character states, whereas "plesiotypic" and "apotypic" is used in combination with taxa and means the degree of distance of a taxon from the base of the group-specific cladogram expressed in the number of dichotomies from the base of the cladogram.

4.3. Descriptions

As in the genus *Sphallomorpha*, most species were described in the last century and by the same authors, namely W. Macleay (1864, 1871, 1888) and Castelnau (1867, 1868), who described together about half of the species, and Westwood (1837, 1853), Hope (1834, 1845), Newman (1842, 1856), Erichson (1842), Gestro (1893), and Blackburn (1893, 1901). Few additional species were described by Chaudoir (1862), Ritsema (1875, 1909), Waterhouse (1877), Lea (1910), Sloane (1910), Notman (1925), and more recently by Darlington (1968). Most descriptions are very short and of little or no use for recognition of species, and even the more recent descriptions do not or barely allow an unequivocal distinction of the species.

As in genus *Sphallomorpha*, most types with exception of those of the species described by Macleay, Lea, and Sloane, and few syntypes of Blackburn, are deposited in European or American museums. This illustrates the difficult situation of the older Australian authors who had no access to most types. Hence, the large number of misidentified species in the available material is understandable, but also repeated description of the same species was common, and the rather large number of synonyms stated by older authors and in this paper is easily understood.

The keys in the general review of Notman (1925) were based mainly on the old descriptions rather than on well identified material or even on types. Because this author saw but few species, only parts of the keys are useful, and as far as the species of *Adelotopus* are concerned, identification of species by use of Notman's key is virtually impossible with exception of few peculiar species. So, in *Adelotopus* at least, identification of species was generally not possible without comparison of types. That this opinion is right, was demonstrated by the study of the named museum material which is to an even greater extent wrongly identified than in the genus *Sphallomorpha*.

4.4. Types

As in the genus *Sphallomorpha*, the situation concerning the types in the remaining pseudomorphine genera is quite favourable, because most types still exist and they are generally in good condition. The

types of few named species only are definitively lost or cannot be found in the institutions where they should be located (BMNH, MCSN, OUM). However, mostly the loss of types is serious, because these species belong to very difficult species-groups in which species distinction is generally impossible without consideration of the male genitalia and of certain external characters like microreticulation and sculpture of the surface. Because the original descriptions are insufficient with respect to those characters, these species cannot be distinguished in the existing material, or synonyms designated by previous authors cannot be verified. Hence they must be treated generally as nomina dubia. In some species described by Newman and Westwood this is especially disadvantageous, because they were most commonly determinated by earlier authors in the existing material, and their names have been frequently cited in the older literature. However, it is virtually impossible to know what they meant. Through courtesy of the respective curators I was able to examine almost all existing types. During the study it became evident that examination of male and usually also of female genitalia of types was indispensible. Hence, most types were dissected and it proved that some type series contain more than one species. On this and on other reasons, lectotypes were generally designated.

4.5. Origin of material

Although almost 5700 specimens have been examined for this study, rather few species are well represented in the sample, whereas many are represented by few or even single specimens only. As in *Sphallomorpha*, the southeastern part of Australia (eastern South Australia, Victoria, New South Wales, southern Queensland) is fairly well represented, while material from other parts of Australia is much rarer and has been almost exclusively collected within the last 30 years. Hence, the faunas of Western Australia, the whole Northern Territory, interior South Australia, as well as those of western Queensland and western New South Wales, but also that of northern Queensland, especially the Cape York Peninsula, are very inadequately known, although the faunas are presumably much richer than previously believed. Especially Western Australia seems surprisingly rich in species, although at present records are scattered and most species are rare in the available material. Hence, for a more balanced knowledge of the fauna, careful collecting work in most parts of Australia would be much desired, and certainly this would yield additional new species in the remote areas of the north, west, and centre. The same applies perhaps also for New Guinea and the Oriental Region, the pseudomorphine fauna of which is certainly not well known due to lack of specialized and systematic collecting work.

4.6. Distinguishing Characters

Several species of *Adelotopus*, *Cainogenion*, and *Cryptocephalomorpha* bear more or less conspicuous colour patterns, in most species, however, pattern alone does not offer good determinating characters, because it varies to a considerable degree and, on the other hand, is quite similar in certain species. Hence in many species male genitalia, commonly also female genitalia offer the best or even the exclusive distinguishing characters. Special attention should be paid to shape of aedeagus, structure and pattern of the internal sac, shape of parameres, genital ring, and sternite VIII, and in females to shape and chetotaxy of the stylomeres. Generally, dissection and examination of the carefully cleaned male genitalia is mandatory. Usually they should be leached for some time in KOH to make visible the complicated and commonly distinctive inner structures. In some species-groups shape and structure of aedeagus, parameres, and other genital sclerites offer virtually the only chance for species distinction.

Commonly, however, other characters are also useful for species differentiation:

Female genitalia, especially the stylomeres, are rather useful, although they are generally very similar within the different genera. However, some species are well recognized by the structure of their female genitalia.

Body shape, especially shape of pronotum and elytra, in particular shape of the lateral margin of both and of the basal angles of the pronotum, commonly provide good characters for species differentiation, but also for distinction of species-groups.

Of the chetotaxy (see below) only the umbilical pores and setae of the elytra and the ambulatory setae of the abdomen yield useful differentiating characters, but mainly on the species-group level.

Microsculpture (puncturation and microreticulation) of the upper surface and degree of striation of the elytra are very useful characters, although they seem rather variable in certain species. For their use, however, they must be very carefully examined, usually at least at 40× or even 65× magnification and under good light.

Colour and pattern are useful for species distinction, but they should be used with care and preferably in combination with other characters.

4.7. Chetotaxy

Contrary to the genus *Sphallomorpha*, chetotaxy is reduced to a considerable degree in the other pseudomorphine genera and, as a consequence, does not offer as useful distinctive characters as in *Sphallomorpha*. Hence, in the descriptions chetotaxy is not given a special paragraph.

4.8. Illustrations

Because identification of species is still very difficult, as much information as possible has been included in the illustrations. Apart from several structures of male and female genitalia, line drawings of the whole beetle, the clypeus and labrum, the terminal palpomeres, and the antennae of all species were provided. Details of striation, puncturation, and microreticulation of the elytra are also provided for all species. Frontodorsal and ventral surface of head is illustrated of one example of all genera and subgenera. In all taxa of the genus *Cainogenion* the frontal view of head is figured. In the line drawings of the habitus which have been taken from photographs, pattern is indicated by bold lines that are more or less tightly dotted according to the degree to which pattern is well delimited. Explanations of the lateral borders of pronotum and elytra have been finely dash-dotted to give an impression of the convexity of the surface. Because in most species but few specimens are available, these illustrations have not been provided as SEM pictures which would have been more predicatory. Only some structural characters of one paradigmatic species each of all genera – except for *Pseudomorpha*, subgenus *Austropseudomorpha*, of which material was too scarce – are presented as SEM photographs. However, photographs of 48 species, including at least one species of all species-group of *Adelotopus*, are added as illustration of the wide variation of shape and colour.

4.9. Data of examined material

Data of examined material are given in full length including date of collection and name of collector, but without collecting circumstances which have been mentioned under "habits". In types, the exact labelling was used, including all ciphers, notes of determinators and curators, and printed labels. Original spelling of date of collecting, especially of the month (arabics, roman, abbreviations), has been used only in types, in the other specimens the month is recorded in roman words. Under "material examined", types have been repeated only, when non-typical material is also recorded, otherwise the reader should look under "types". Records of examined material have been given in an anti-clockwise geographical arrangement, beginning with South Australia and ending with Western Australia, or New Guinea, or Malaysia, respectively. Records not specified to a state and pure records from "Australia", are added under "**Aus**", records not even mentioning "Australia" are cited under "?". States are recorded with their usual abbreviations (see under "abbreviations"). State records or data like "Australia", "Nov. Holl." etc. have not been repeated in non-typical material.

Earlier determinations were recorded with quotation of the determinator. When a specimen was sent from a collection as being arranged there under a certain species name, though without bearing a label, this name was quoted with preceding "det.".

4.10. Distribution maps

Distribution maps are based on label data of examined specimens only. Label data I was not able to read or to localize and pure state records are not indicated in the maps. Many of the older specimens bear only state records or no data at all, hence in several species distribution maps show by no means the real distribution.

4.11. Measurements

Measurements were taken using a stereo microscope with an ocular micrometer. Length has been measured from apex of labrum to apex of elytra. Lengths, therefore, may slightly differ from those of other authors. Length of pronotum was measured from middle of apex to base, width of pronotum at widest part. Width of apex of pronotum was measured between the tips of the apical angles, width of base at the basal angles or just in front of them in the case they are rounded off. Length/width ratios are somewhat variable in most species, but generally offer rather good measures of relative shape.

4.12. Magnifications

Especially for examination of the generally fine though taxonomically highly important puncturation and microreticulation of the surface a stereo microscope with at least 40×, better 65× magnification is needed, and of course a good lamp of high intensity that can be focussed. For good definition of the microsculpture a lamp giving natural light is preferable, because fibre-glass optics substantially change the surface structures.

4.13. Abbreviations

Following abbreviations were used in the text, especially in the keys:

Aus	Australia
NG	New Guinea
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia
?	origin not specified
c	central
ce	central eastern
cw	central western
e	eastern
n	northern
ne	northeastern
nw	northwestern
s	southern
se	southeastern
sw	southwestern
w	western
l/w	ratio length/width
w/l	ratio width/length
>	larger or more than
<	smaller or less than
40×	40× magnification
65×	65× magnification

5. Way of life and collecting methods

5.1. Way of life

Since writing of the first part of this revision, few new records of the way of life of Pseudomorphinae have been gathered. However, it has been shown during the ample dissections in the course of preparing the present paper that at least the genera *Adelotopus*, *Cainogenion*, and *Paussotropus* are ovoviviparous, and this has been confirmed by the discovery of larvae in the oviducts of 38 species and one additional subspecies of *Adelotopus*, 5 species and one additional subspecies of *Cainogenion*, and of *Paussotropus cylindricus*. Due to the small number of specimens available in *Cryptocephalomorpha* and in the Australian species of *Pseudomorpha* subgenus *Austropseudomorpha* ovovivipary has not yet been confirmed in these genera or subgenera, though is perhaps present. Recently R. T. Bell (in litt.) informed me that a female *Adelotopus* gave birth to larvae when drawn into alcohol. Because Liebherr & Kavanaugh (1985) described the ovovivipary in American *Pseudomorpha*, this phenomenon is definitely only absent from *Sphallomorpha* which seems in several respects the most plesiomorphic genus of the whole subfamily. For further discussion of the structure of larvae see below.

During recent collections made in the Cape York Peninsula in the course of a joint programme carried out by the DPIM, QMB, and ANIC a fairly large number of pseudomorphine beetles were collected in Malaise traps that were exposed for a longer period (one or two months) at the same locality. Although it is generally not known, at what time of the day or night the beetles were captured while on flight, they do perhaps fly more readily than reported from collecting work during daytime.

Apart from endogene stimulantia flying behaviour during daytime may also depend on the surrounding temperature. This has been several times observed while capturing large numbers of *Sphallomorpha* and *Adelotopus* species in different parts of Australia. Best time for collecting is morning, when the beetles are still rather sluggish and almost always rely upon running away for flight, whereas in late afternoon during warm days beetles much more easily try to escape by flying away.

5.2. Myrmecophilous habits

The myrmecophily of certain but still very few pseudomorphine species has been stated mainly by Moore (1964, 1974), Lenko (1972), and Erwin (1981) who described this behaviour in *Sphallomorpha colymbetoides* Westwood (= *albopicta* Newman), *S. nitiduloides* Guérin, *Pseudomorpha laevissima* Chaudoir, some other *Pseudomorpha* species from North America, and an unknown genus from Australia. According to Lenko (1972) the larvae of *Pseudomorpha laevissima* Chaudoir live in the nests of *Camponotus rufipes* (F.), the larvae of which they eat. Two unnamed *Pseudomorpha* larvae from the southwestern USA described by Erwin (1981) were found in nests of *Camponotus semitestaceus* Emery, *Myrmecocystis testaceus* Emery, and *Neivamyrmex nigrescens* (Cresson).

Contrary to the situation in *Sphallomorpha*, in *Adelotopus*, *Cainogenion*, *Paussotropus*, and the Australian *Pseudomorpha* at least, more records of beetles collected with ants are now available, or beetles have been mounted together with the presumable host ant on the same card. The following records are available in the material at hand (Tab. 1). For better comparison tab. 2 gives also the Australian pseudomorphine species recorded from different ant species:

Tab. 1. List of ant and termite hosts of the genera *Sphallomorpha*, *Adelotopus*, *Cainogenion*, and *Pseudomorpha*, subgenus *Austropseudomorpha*.

Pseudomorphinae	ants and termites
Sphallomorpha amabilis (Castelnau)	*Opistopsis haddani* Em. nest
Sphallomorpha flavicollis (Macleay)	*Opistopsis haddani* nest
	Opistopsis respirinus nest
Sphallomorpha rhomboidalis Baehr	*Iridomyrmex purpureus* nest
Sphallomorpha ruficollis Baehr	*Iridomyrmex detectus* nest
Adelotopus affinis Castelnau	*Tapinoma* sp.
Adelotopus apicalis Macleay	*Camponotus dorycus* (Sm.)

Adelotopus brevipennis Macleay	*Iridomyrmex* sp.
Adelotopus celeripes Lea	*Camponotus* sp.
	Hypoclinea (= *Diceratoclinea*) sp. (nov.?)
	Wasmannia sp.
Adelotopus cuneatus, spec. nov.	*Iridomyrmex* sp.
Adelotopus dytiscides Newman	*Camponotus* nr. *nigriceps* (Sm.)
Adelotopus gyrinoides Hope	*Iridomyrmex conifer* Forel
Adelotopus laevis Macleay	*Iridomyrmex* sp.
Adelotopus linearis Macleay	*Coptotermes acinaciformis*
Adelotopus punctatus Castelnau	*Mastotermes* sp.
Adelotopus zonatus Castelnau	*Technomyrmex* sp.
Cainogenion ephippiatum (Newman)	*Crematogaster* sp.
Cainogenion glabratum, spec. nov.	*Crematogaster* sp.
Cainogenion ipsoides (Westwood)	*Iridomyrmex* sp.
	Formica sp.
Cainogenion obscurum (Castelnau)	"under bark attended by ants"
Cainogenion parumpilosum, spec. nov.	*Crematogaster* sp.
Cainogenion tropicum, spec. nov.	*Crematogaster* sp.
Pseudomorpha brevis, spec. nov.	*Crematogaster* sp.
Cryptocephalomorpha papua Darlington	"Small ants"

Tab. 2. List of ants and termites and their pseudomorphine guests

Ants	**Pseudomorphinae**
Camponotus dorycus (Sm.)	*Adelotopus apicalis* Macleay
Camponotus nr. *nigriceps* (Sm.)	*Adelotopus dytiscides* Newman
Camponotus spec.	*Adelotopus celeripes* Lea
Crematogaster spec. 1	*Cainogenion glabratum*, spec. nov.
Crematogaster spec. 2	*Pseudomorpha brevis*, spec. nov.
Crematogaster spec. 3	*Cainogenion ephippiatum* (Newman)
Crematogaster spec. 4	*Cainogenion tropicum*, spec. nov.
Crematogaster spec. 5	*Cainogenion parumpilosum*, spec. nov.
Formica spec.	*Cainogenion ipsoides* (Westwood)
Hypoclinea (=*Diceratoclinea*) spec. (nov?)	*Adelotopus celeripes* Lea
Iridomyrmex conifer Forel	*Adelotopus gyrinoides* Hope
Iridomyrmex detectus	*Sphallomorpha ruficollis* Baehr
Iridomyrmex purpureus	*Sphallomorpha rhomboidalis* Baehr
Iridomyrmex spec. 1	*Adelotopus cuneatus*, spec. nov.
Iridomyrmex spec. 2	*Adelotopus brevipennis* Macleay
	Adelotopus laevis Macleay
Iridomyrmex spec. 3	*Cainogenion ipsoides* (Westwood)
Opisthopsis haddani	*Sphallomorpha amabilis* (Castelnau)
	Sphallomorpha flavicollis (Macleay)
Opisthopsis respirinus	*Sphallomorpha flavicollis* (Macleay)
Tapinoma spec.	*Adelotopus affinis* Castelnau
Technomyrmex spec.	*Adelotopus zonatus* Castelnau
Wasmannia spec.	*Adelotopus celeripes* Lea
unspecified ants	*Cainogenion obscurum* (Castelnau)
	Cryptocephalomorpha papua Darlington
Termites	
Coptotermes acinaciformis	*Adelotopus linearis* Macleay
Mastotermes spec.	*Adelotopus punctatus* Castelnau

As the lists above demonstrate, thus far rather few ant genera are known as hosts of pseudomorphine species. Although the records are still fairly unsatisfactory, few perhaps more general trends are worth noting:

1. Very few pseudomorphine-ant host relations are yet recorded in the genus *Sphallomorpha.*

2. Ants of the primitive genus *Camponotus* are only recorded as hosts of three decidedly primitive *Adelotopus* species, but also of the primitive *Pseudomorpha laevissima* and of a further North American *Pseudomorpha* species.

3. The ant genus *Crematogaster* is not yet known as host of any *Adelotopus* species, but of several species of *Cainogenion* and of one Australian *Pseudomorpha* species.

Very little is known about the way of life of pseudomorphine larvae. Apparently there is only Moore`s (1974, 1983) description of the larval behaviour of two *Sphallomorpha* species. According to Moore the proved myrmecophilous species of this genus are commensals the larvae of which are fairly normal shaped and live like cicindelid larvae in burrows around the nests of ants of the genus *Iridomyrmex* that they eat. The larvae of the other genera, however, are inquilines and this is in conformity with the mode of reproduction that is ovoviviparous (larviparous) in these genera, while oviparous in *Sphallomorpha.* Larvae of the highly evolved genus *Cryptocephalomorpha* are still unknown.

5.3. Collecting methods and preservation

Collecting methods for the genera *Adelotopus, Cainogenion,* and *Paussotropus* are basically the same as described for *Sphallomorpha*. However, even more attention should be paid to ant nests, since species of the mentioned genera are likely even more dependent on ants than those of *Sphallomorpha* (see chapter above). Little is known in this respect about the Australian species of *Pseudomorpha,* some of which have been captured in "pitfall traps", and species of *Cryptocephalomorpha* are generally found only at light, but should be carefully sought for in leaf litter near ants.

As in *Sphallomorpha,* the specimens should be mounted in such a way that at least the lower surface of the head is visible. Male and female genitalia should be carefully dissected and cleaned, and the aedeagus should be leached for some time in KOH. The name of the host tree, as well as the name of the ant species, when the beetle was found by ants, should be added to the label, because there is still very little knowledge of interdependence of pseudomorphines with their host trees and ants.

6. Larvae

In a highly specialized, rather unform, myrmecophilous beetle group the phylogeny of which is difficult to trace, larvae might be particularly suitable for phylogenetic reasoning because they might better preserve the original differences between the genera than imagines. However, little is known about the larvae of Pseudomorphinae and not even from all genera larvae have been recorded. Moore (1964) described the first pseudomorphine larva and took it for a larva of the genus *Sphallomorpha.* Subsequently, Moore (1974) observed and reared the true larvae of two *Sphallomorpha* species and thought that the formerly described larva might belong to either *Adelotopus* or *Cainogenion.* Lenko (1972) figured the outline of the larva of the South American *Pseudomorpha laevissima* Chaudoir, and Erwin (1981) summarized what was then known about pseudomorphine larvae and described and figured the *Sphallomorpha* larva as well as two further *Pseudomorpha* larvae. Liebherr & Kavanaugh (1985) first reported the ovoviviparous (larviparous) parturation in *Pseudomorpha,* and Moore (in litt.) and Bell (in litt.) recently observed the same in one *Adelotopus* species each. Including the observations made during the dissections for the present revision, larvae are now known from 2 species of *Sphallomorpha,* 3 species of American *Pseudomorpha,* 38 species of *Adelotopus,* 5 species of *Cainogenion,* and from *Paussotropus cylindricus,* the single species of this genus. No larvae are so far known from most species-groups of *Sphallomorpha,* especially from the more plesiomorphic species-groups and from those groups formerly included in the genus "*Silphomorpha*", from the Australian subgenus *Austropseudomorpha* of the genus *Pseudomorpha,* and from *Cryptocephalomorpha.*

According to the descriptions and figures of Moore (1964, 1974), Lenko (1972), and Erwin (1981) and the summary of Arndt (1993) pseudomorphine larvae are fairly apomorphic in: the absence of lacinia, stemmata, and urogomphi; their cicindelid or physogastric habitus; the small, 1-segmented galea; and the peculiar chetotaxy with fungiform or apically split setae on the head. However, some of these characters do not apply to all pseudomorphine larvae, and in some species or even genera the galea is 2-segmented, or the head does not bear fungiform or apically split setae.

The known larvae of *Sphallomorpha* are certainly most plesiomorphic within the family, because they are neither physogastric, nor do they apparently possess the characteristic fungiform, or club-shaped, or apically split setae on the head (see figures in Moore 1974 and Erwin 1981) that are present in the figured *Pseudomorpha* larvae (Erwin 1981) and in those larvae of *Adelotopus* I examined. Moreover, in the figured *Sphallomorpha* larva the head is rather large and not lengthened and the legs are still fairly elongate. Moore (1974) described the habits of the two *Sphallomorpha* larvae as much alike to that of certain tiger beetles, because they wait in holes in the ground around ant nests for passing ants and seize them from their hollows. It must be stressed, however, that these larvae belong to highly apomorphic species-groups and species within the genus, and it is by no means certain that larvae of plesiomorphic species-groups of *Sphallomorpha* have similar morphology and way of life.

The only apotypic feature I can find in the two described *Sphallomorpha* larvae is the styliform antenna. But a similar styliform antenna is also present in the larva of *Adelotopus macilentus*, spec. nov., a fairly evolved species within its genus, whereas the known larvae of the other *Adelotopus* species have normal shaped antennae. Hence, the apotypic structure in *Sphallomorpha* equally could have been evolved within this genus and it is not necessarily an apomorphic state of the genus as a whole as Erwin (1981) postulated.

The figured *Pseudomorpha* larvae (Lenko 1972, Erwin 1981) are highly specialized, because they are conspicuously physogastric, have very short legs, a small and elongate head with small mouth parts, lack most of the body setae but bear characteristic fungiform setae on the head. The larva mentioned by Moore (1964) and again pictured in Erwin (1981) is rather similarly shaped but lacks the characteristic fungiform setae and may actually belong either to a species of *Cainogenion* or to the Australian subgenus *Austropseudomorpha* of the genus *Pseudomorpha*, if it is at all a pseudomorphine larva.

During my study I observed larvae only in the oviducts of females, hence all larvae described or mentioned herein are 1st instar larvae. It is therefore somewhat questionable, whether they can be compared with the described larvae which are mainly larvae of later states. The number of larvae observed in a single female is commonly about 5-6, rarely up to about 15. The larvae are coiled together and tightly packed in the oviducts and do not show very striking differences of size. Even in large species like *Adelotopus dytiscides* the observed larvae are rarely longer than 1.5 mm.

6.1. Descriptions of the larvae of the different pseudomorphine genera

Genus *Sphallomorpha*. For the two known larvae see Moore (1974) and Erwin (1981).

Genus *Pseudomorpha*. For the three known larvae of the American species see Lenko (1972) and Erwin (1981). Larvae of the Australian species are still unknown.

Genus *Adelotopus*. Larvae of the following species have been observed during this study: ***dytiscides*-group**: *A. dytiscides, A. ulrichi, A. apicalis, A. zborowskii*; ***brevipennis*-group**: *A. brevipennis, A. s. sinuaticollis*; ***marginicollis*-group**: *A. coriaceus, A. seminitidus*; ***politus*-group**: *A. politus, A. doyeni, A. substriatus, A. haemorrhoidalis, A. minor, A. b. bimaculatus, A. b. angustior, A. languidus*; ***multipunctatus*-group**: *A. ovatus*; ***similis*-group**: *A. similis*; ***seriepunctatus*-group**: *A. puncticollis angustemaculatus*; ***rubiginosus*-group**: *A. rubiginosus, A. distinguendus, A. laticollis, A. cribricollis, A. virgatus, A. queenslandicus*; ***laevis*-group**: *A. laevis, A. c. ciliatus*; ***gyrinoides*-group**: *A. g. gyrinoides, A. d. dubius, A. montorum, A. victoriensis, A. murrayanus, A. parumpunctatus, A. lunatus, A. rufoguttatus, A. macilentus*; ***fasciatus*-group**: *A. fasciatus*; ***paroensis*-group**: *A. paroensis*; ***maculipennis*-group**: *A. cuneatus*.

Adelotopus dytiscides (Newman)

Figs 2, 3, 5-7, 12, 17, 18

Length (anterior margin of nasale to apical margin of segment IX): 1.46 mm; width (across head): 0.28 mm; width (across widest abdominal segment): 0.3 mm.

Colour. White, mandibles rufous.

Body shape. Elongate, rather parallel, not decidedly physogastric.

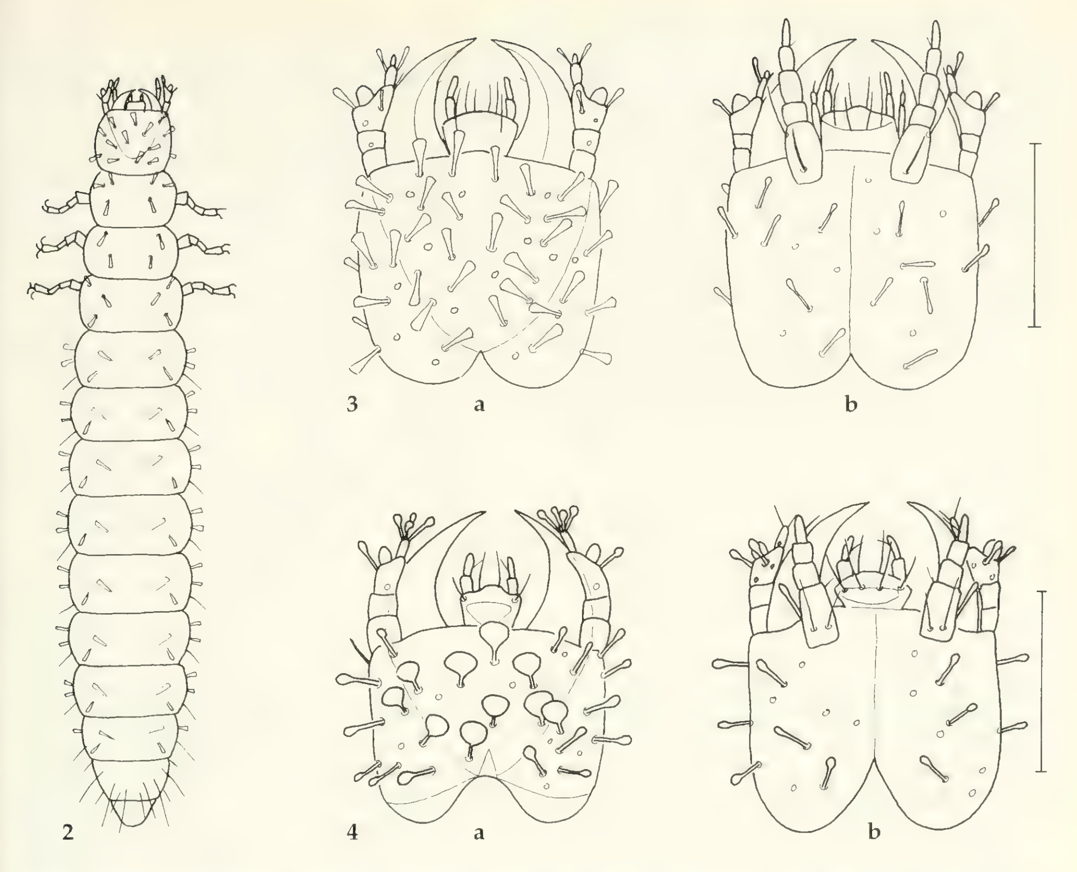


Fig. 2. *Adelotopus dytiscides* Newman. 1st instar larva, dorsal view. Total length: 1.45 mm.
Fig. 3. *Adelotopus dytiscides* Newman. 1st instar larva. Head. **a.** dorsal view. **b.** ventral view. Scale: 0.1 mm.
Fig. 4. *Adelotopus rubiginosus* Newman. 1st instar larva. Head. **a.** dorsal view. **b.** ventral view. Scale: 0.1 mm.

Head. Rather large and wide, wider than long, laterally about parallel, neck absent. Frontal sutures broadly v-shaped, joined posteriorly. Nasale slightly sinuate. Antenna elongate, 4-articulate, 3rd antennomere laterally excised, with hyaline bulb, setae partly club-shaped, see fig. 12. Eyes absent. Mandibles acute, evenly curved, median edge sharp, in middle with small retinaculum, penicillus absent, laterobasally with normal-shaped seta. Maxilla large, rather elongate, with 4-articulate palpus, 2-articulate, rather elongate galea, without lacinia, but with elongate seta at this place, setae normal-shaped, see fig. 7. Labium short and wide, anteriorly convex, with 2 terminal, 4 ventral, and 2 dorsal setae, palpus 2-articulate, rather elongate.

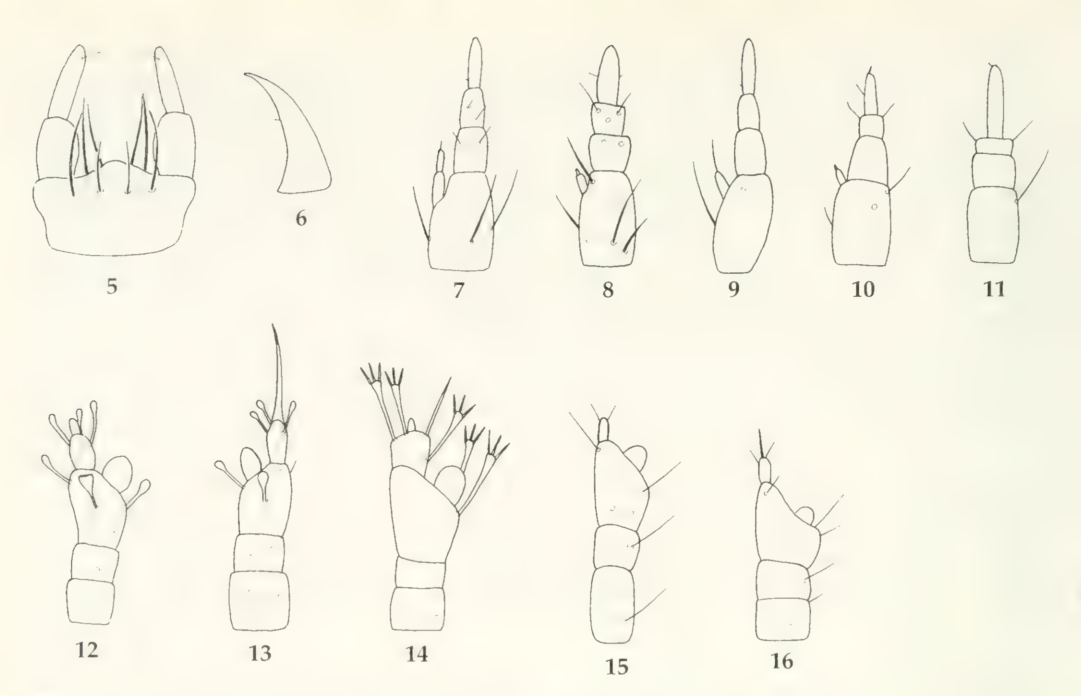
Legs. Rather elongate, all legs with two slightly unequal claws.

Abdomen. Pygopod without crochets, urogomphi absent.

Chetotaxy. Upper surface of head with rather few club-shaped to feebly fungiform setae (Fig. 17), lower surface with sparse club-shaped setae only. 3rd and 4th antennomeres with few club-shaped setae, maxilla and labium with normal-shaped setae only. Thorax laterally with few club-shaped setae, abdomen dorsally and laterally with few short, slightly fungiform setae (Fig. 18), ventrally with some normal-shaped setae. Terminal segments of abdomen with several elongate, normal-shaped setae.

Differences in certain structures in the larvae of the genus *Adelotopus*.

In the following enumeration the larvae of the species-groups of *Adelotopus* are being briefly characterized with special emphasis to those characters that differ within the genus.



Figs 5-16. 1st instar larvae of different Pseudomorphinae. Mouth parts. **5-6.** *Adelotopus dytiscides* Newman. **5.** Labium, ventral view. **6.** Mandible. **7-11.** Maxilla. **7.** *Adelotopus dytiscides* Newman. **8.** *A. rubiginosus* Newman. **9.** *A. seminitidus*, spec. nov. **10.** *Cainogenion* (s. str.) *ipsoides* (Westwood). **11.** *Paussotropus cylindricus* Chaudoir). **12-16.** Antenna. **12.** *Adelotopus dytiscides* Newman. **13.** *A. macilentus*, spec. nov. **14.** *A. cuneatus*, spec. nov. **15.** *Cainogenion* (s. str.) *ipsoides* (Westwood). **16.** *Paussotropus cylindricus* Chaudoir).

***dytiscides*-group**. The known larvae of the other species of the *dytiscides*-group are fairly similar to that of *A. dytiscides*.

***brevipennis*-group.** Basically similar to *dytiscides*-group. Antenna but moderately elongate. Galea 2-articulate. Labial palpus medium sized. Surface of head with club-shaped setae only. Dorsolateral surface of abdomen with moderately numerous, short, club-shaped setae, lower surface with some normal-shaped setae.

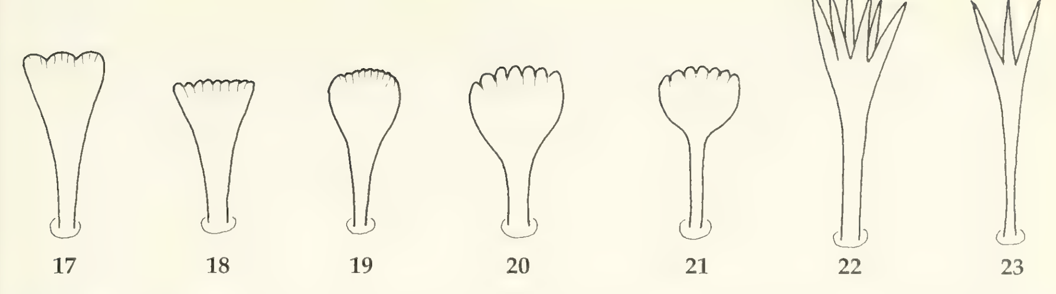
***marginicollis*-group.** Basically similar to *dytiscides*-group. Antenna but moderately elongate. Galea 1-articulate (Fig. 9). Labial palpus medium sized. Surface of head with very few faintly club-shaped setae. Thorax and abdomen with very few club-shaped setae.

***politus*-group.** Very similar to *dytiscides*-group. Galea 2-articulate. Surface of head with rather few club-shaped setae, thorax and abdomen dorsolaterally with few club-shaped setae, ventrally with normal-shaped setae.

***multipunctatus*- and *similis*-groups**. Similar to *politus*-group.

***seriepunctatus*-group**. Basically similar to *dytiscides*-group. Antenna short, 3rd antennomere wide. Galea 2-articulate, elongate. Mandible rather short. Labial palpi short. Upper surface of head with club-shaped to slightly fungiform setae, lower surface of head and dorsolateral surfaces of thorax and abdomen with rather numerous club-shaped setae, all setae remarkably elongate.

***rubiginosus*-group**. Basically similar to *dytiscides*-group. Antenna rather short and wide. Galea 1-articulate, small (Fig. 8). Lower surface of head with club-shaped setae, upper surface in middle with very wide fungiform setae, laterally with club-shaped setae (Fig. 4). Thorax and abdomen with regular pattern of elongate, club-shaped setae, only terminal segments with some normal-shaped setae.



Figs 17-23. Types of setae of different *Adelotopus* larvae. **17-18.** *A. dytiscides* Newman. **17.** Seta on head. **18.** Seta on abdomen. **19.** *A. macilentus*, spec. nov., seta on head. **20.** *A. paroensis* Castelnau, seta on head. **21-22.** *A. fasciatus* Castelnau. **21.** Seta on head. **22.** Seta on abdomen. **23.** *A. cuneatus*, spec. nov., seta on head.

***laevis*-group**. Similar to *rubiginosus*-group.

***gyrinoides*-group**. Basically similar to *dytiscides*-group. Antenna rather elongate, in *A. macilentus* with very elongate apical seta (Fig. 13). Galea 2-articulate, elongate. Upper surface of head with narrowly fungiform setae (Fig. 19), lower surface of head and dorsolateral surfaces of thorax and abdomen with few club-shaped setae, in *A. macilentus* also with several short, moderately fungiform setae, ventral parts with some normal-shaped setae. Penultimate abdominal segment with several very elongate, normal-shaped setae.

***paroensis*-group**. Basically similar to *dytiscides*-group. Antenna rather elongate. Galea 2-articulate, very elongate. Upper surface of head with moderately wide fungiform setae (Fig. 20), lower surface and dorsolateral surfaces of thorax and abdomen with rather few club-shaped setae, ventral surface with normal-shaped setae.

***fasciatus*-group**. Basically rather similar to *dytiscides*-group. Antenna rather short and wide. Galea 2-articulate, elongate. Labial palpus rather elongate. Surface of head with few rather fungiform setae (Fig. 21), dorsolateral surfaces of thorax and abdomen with few slightly fungiform setae that are remarkably stout and apically conspicuously serrate (Fig. 22). Lower surface with fairly numerous, very elongate normal-shaped setae. Penultimate abdominal segmemt with some extremely elongate normal-shaped setae.

***maculipennis*-group**. Basically similar to *dytiscides*-group. Antenna short and wide (Fig. 14). Galea 2-articulate, terminal article elongate. Labium short and wide, palpi short. Mandibles rather short. Legs short. Surface of head with few tridentate fork-shaped setae (Fig. 23). Dorsolateral surfaces of thorax and abdomen with few faintly fork-shaped setae, lower surface of abdomen with normal-shaped setae. Penultimate segment of abdomen in middle with some very elongate fork-shaped setae and several extremely elongate normal-shaped setae.

This short enumeration demonstrates that the larvae of the different groups of *Adelotopus* are basically rather similar, but differ mainly in the length of their appendages, the number of articles of the galea, and in density and structure of head and body chetotaxy. It should be stressed, however, that unfortunately larvae are not yet known of some of the probably most apomorphic species-groups, viz. the *unicolor-*, *linearis-*, and *nemosomoides*-groups. Moreover, in some of the large groups (e.g. *brevipennis-* and *multipunctatus*-groups) only very few larvae are yet known.

Genus *Cainogenion*. Larvae of the following species have been observed during this study: *C. ipsoides*, *C. c. creberrimum*, *C. c. gnaltae*, *C. obscurum*, *C. subopacum*, *C. tropicum*. Unfortunately no larvae were found in *C. ephippiatum*, the single species of the plesiomorphic subgenus *Procainogenion*, although many females were dissected.

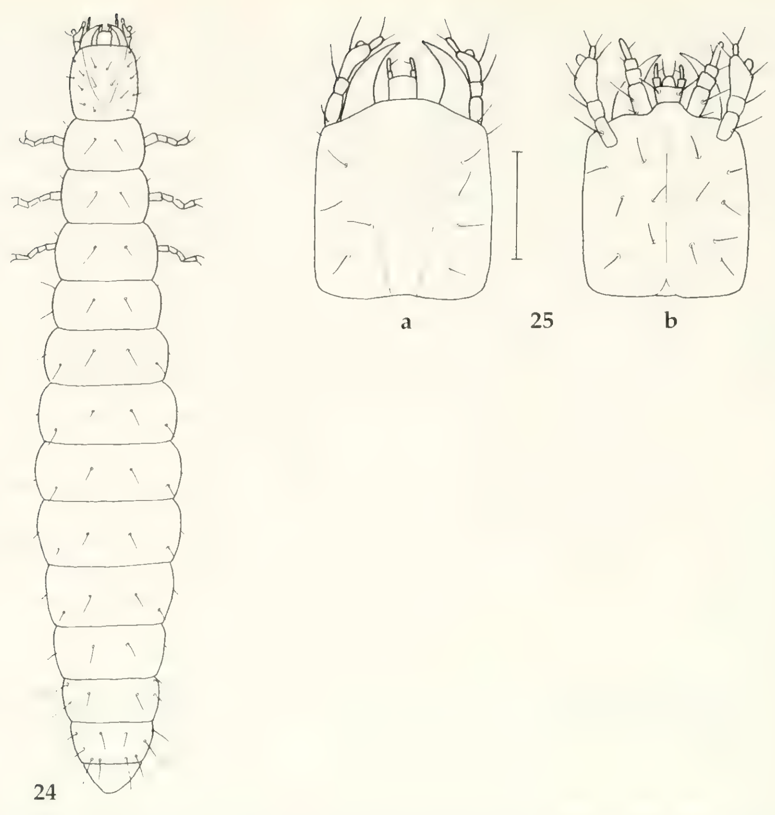


Fig. 24. *Cainogenion* (s. str.) *ipsoides* (Westwood). 1st instar larva, dorsal view. Total length: 1.85 mm.
Fig. 25. *Cainogenion* (s. str.) *ipsoides* (Westwood). 1st instar larva. Head. **a.** dorsal view. **b.** ventral view. Scale: 0.1 mm.

Cainogenion ipsoides ipsoides (Newman)

Figs 10, 15, 24, 25

Length (anterior margin of nasale to apical margin of segment IX): 1.8-2.0 mm; width (across head): 0.16-0.18 mm; width (across widest abdominal segment): 0.35-0.4 mm.

Colour. White, mandibles rufous.

Body shape. Moderately elongate, rather physogastric, but widest about in middle of abdomen.

Head. Small, rather narrow and elongate, longer than wide, laterally almost parallel, neck absent. Frontal sutures narrowly v-shaped, not joined posteriorly. Nasale slightly convex. Antenna moderately elongate, 4-articulate, 3rd antennomere laterally excised, with hyaline bulb, setae see fig. 15. Eyes absent. Mandibles acute, evenly curved, median edge sharp, in middle with small retinaculum, penicillus absent, laterobasally with normal-shaped seta. Maxilla large, rather elongate, with 4-articulate palpus, 1-articulate, very small galea, without lacinia, setae see fig. 10. Labium narrow, anteriorly convex, apparently with 2 terminal, 4 short dorsal, and no ventral setae, palpus 2-articulate, rather elongate.

Legs. Rather short, all legs with two slightly unequal claws.

Abdomen. Pygopod without crochets, urogomphi absent.

Chetotaxy. Surface of head with very few faintly club-shaped or apically very slightly split setae (Fig. 25). 3rd and 4th antennomeres with few extremely faintly slit setae, maxilla and labium with normal-shaped setae only. Thorax and abdomen with few normal-shaped setae only. Terminal segments of abdomen with few elongate, normal-shaped setae.

The larvae of the other examined species are fairly similar to that of *C. ipsoides*.

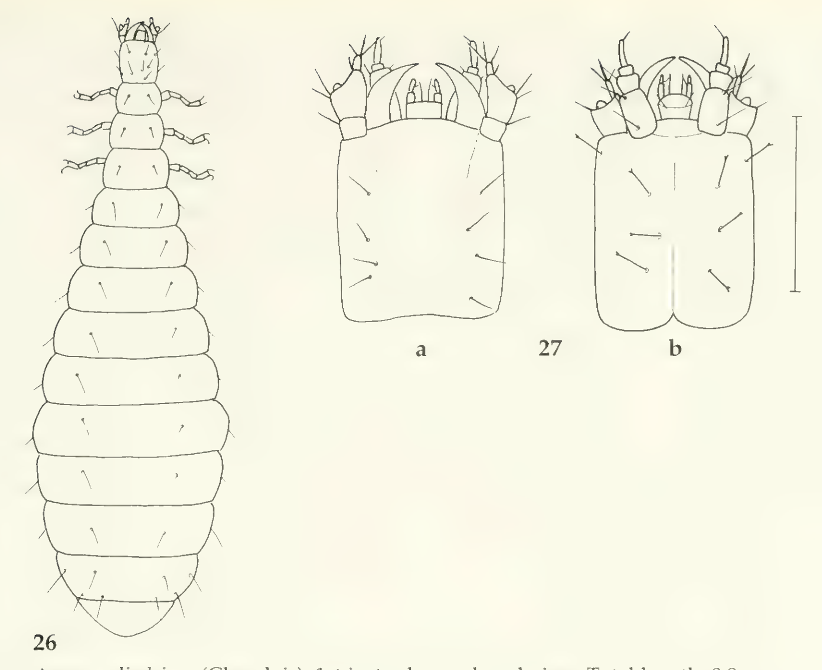


Fig. 26. *Paussotropus cylindricus* (Chaudoir). 1st instar larva, dorsal view. Total length: 0.9 mm.
Fig. 27. *Paussotropus cylindricus* (Chaudoir). 1st instar larva. Head. **a.** dorsal view. **b.** ventral view. Scale: 0.05 mm.

Genus *Paussotropus*. A single, not well preserved larva of the unique species *P. cylindricus* (Chaudoir) has been observed and is described below:

Paussotropus cylindricus (Chaudoir)

Figs 11, 16, 26, 27

Length (anterior margin of nasale to apical margin of segment IX): c. 0.9 mm; width (across head): 0.085 mm; width (across widest abdominal segment): c. 0.6 mm.

Colour. White, mandibles rufous.

Body shape. Elongate, markedly physogastric.

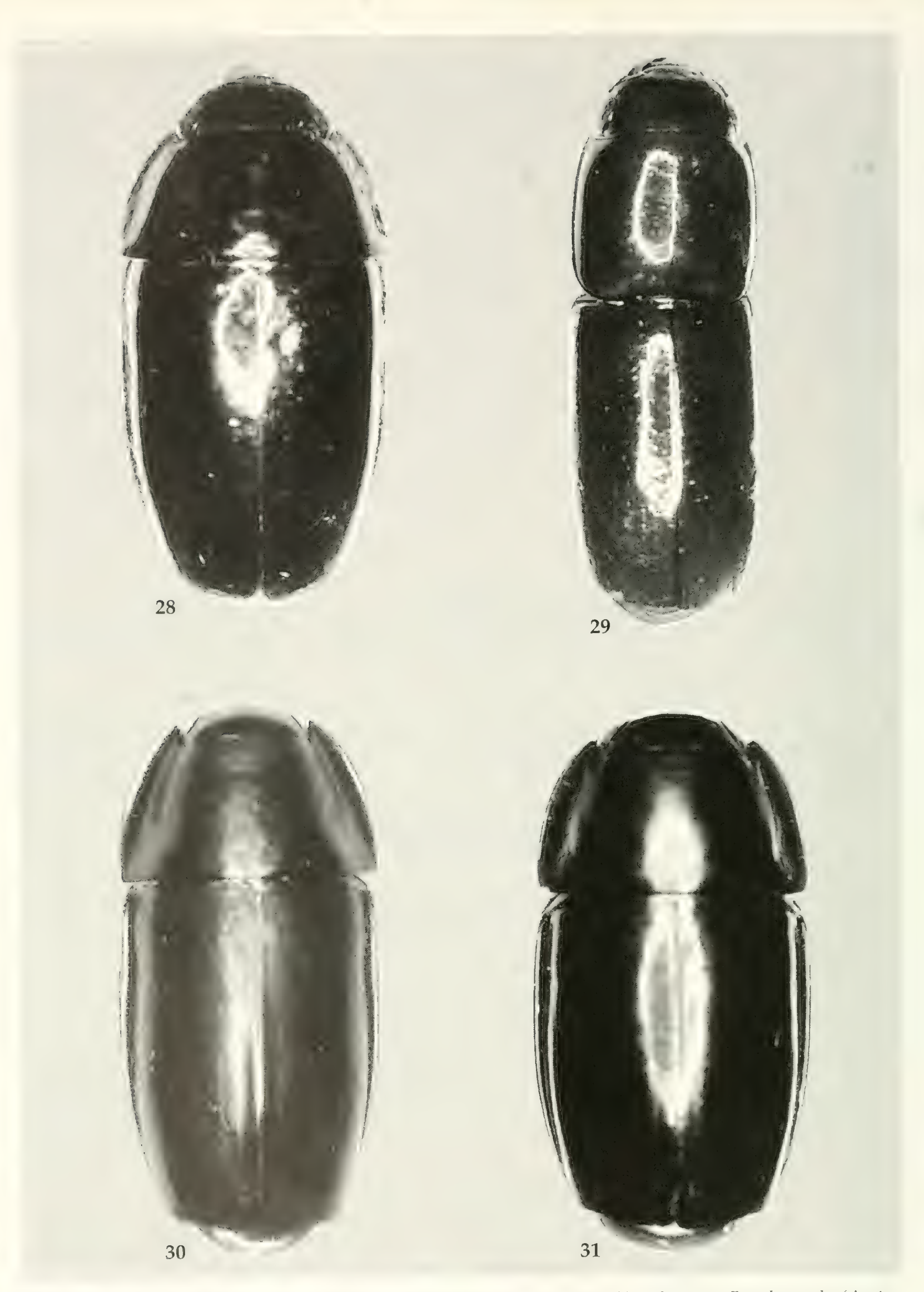
Head. Narrow and elongate, clearly longer than wide, laterally about parallel, neck absent. Frontal sutures narrowly v-shaped, posteriorly not joined. Nasale slightly convex. Antenna very short and stout, 4-articulate, 3rd antennomere very wide, laterally slightly excised, with hyaline bulb, setae see fig. 16. Eyes absent. Mandibles acute, evenly curved, median edge sharp, apparently without retinaculum, penicillus absent, laterobasally with normal-shaped seta. Maxilla large, rather elongate, apparently with only 3-articulate palpus, the terminal palpomere very elongate, galea absent, without lacinia, setae see fig. 11. Labium narrow and elongate, anteriorly slightly convex, apparently with 2 terminal setae only, palpus 2-articulate, small and rather short.

Legs. Rather short, all legs with two, slightly unequal claws.

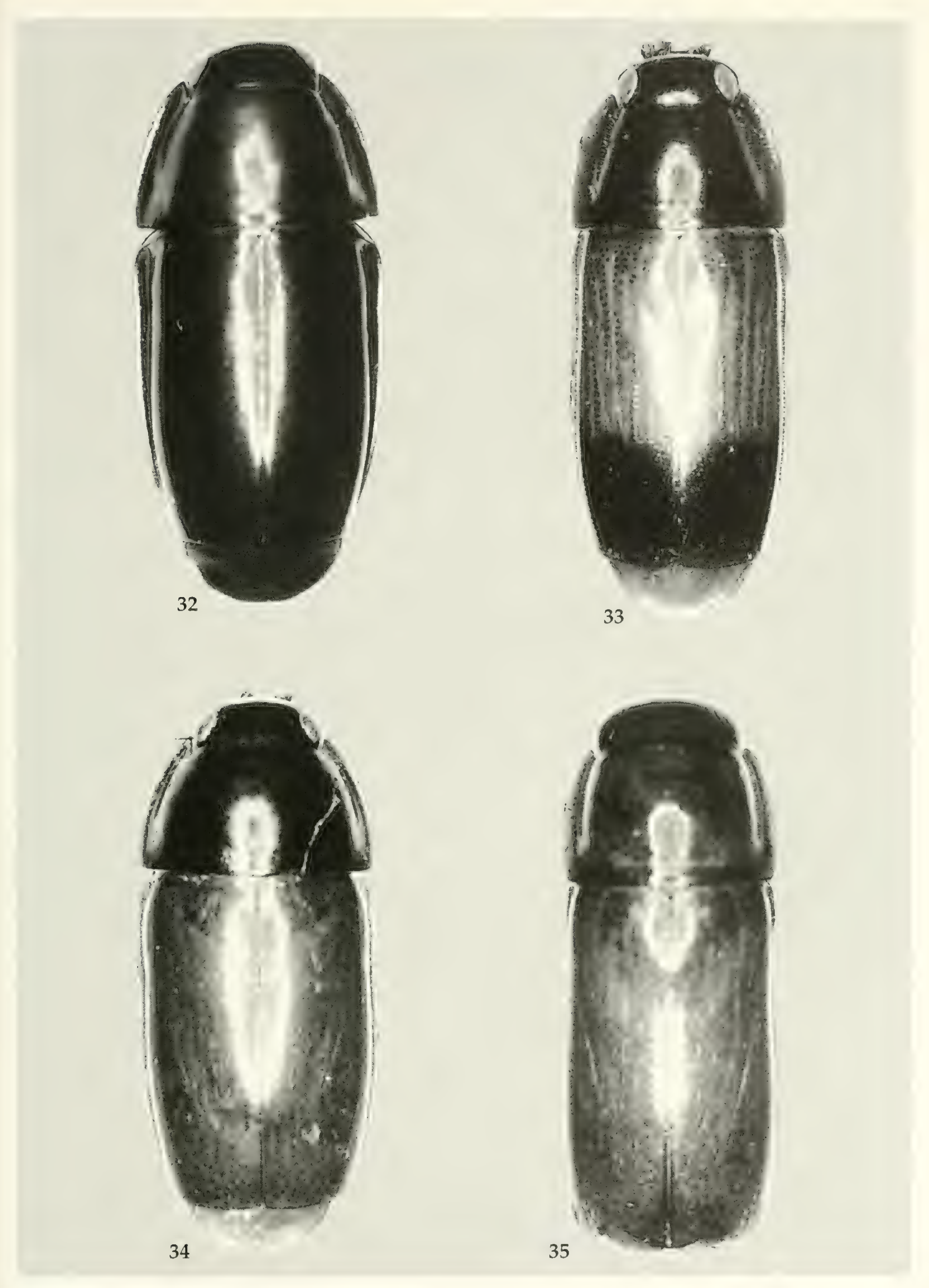
Abdomen. Pygopod without crochets, urogomphi absent.

Chetotaxy. Surface of head with few apically faintly split setae (Fig. 27). 3rd and 4th antennomeres with few normal-shaped setae, maxilla and labium also with normal-shaped setae only. Thorax and abdomen only ventrally with few normal-shaped setae. Terminal segments of abdomen with few elongate, normal-shaped setae.

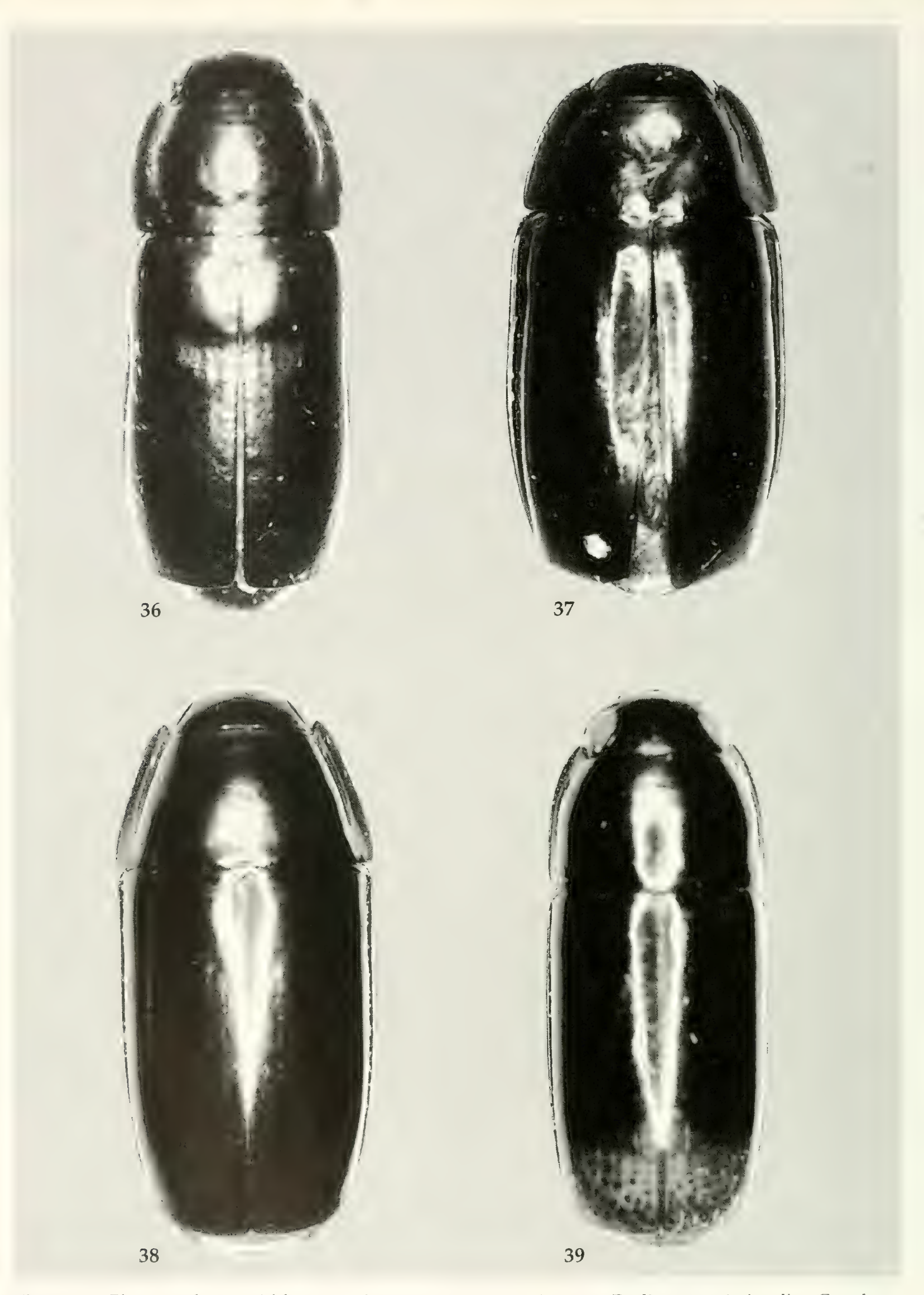
Genus *Cryptocephalomorpha*. Of this genus larvae are thus far unknown.



Figs 28-31. Photographs. **28.** *Pseudomorpha (Notopseudomorpha) laevissima* Chaudoir. **29.** *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane). **30.** *Adelotopus dytiscides* Newman. **31.** *A. katherinei*, spec. nov. Lengths: 6.8 mm; 6.7 mm; 8.8 mm; 5.8 mm.



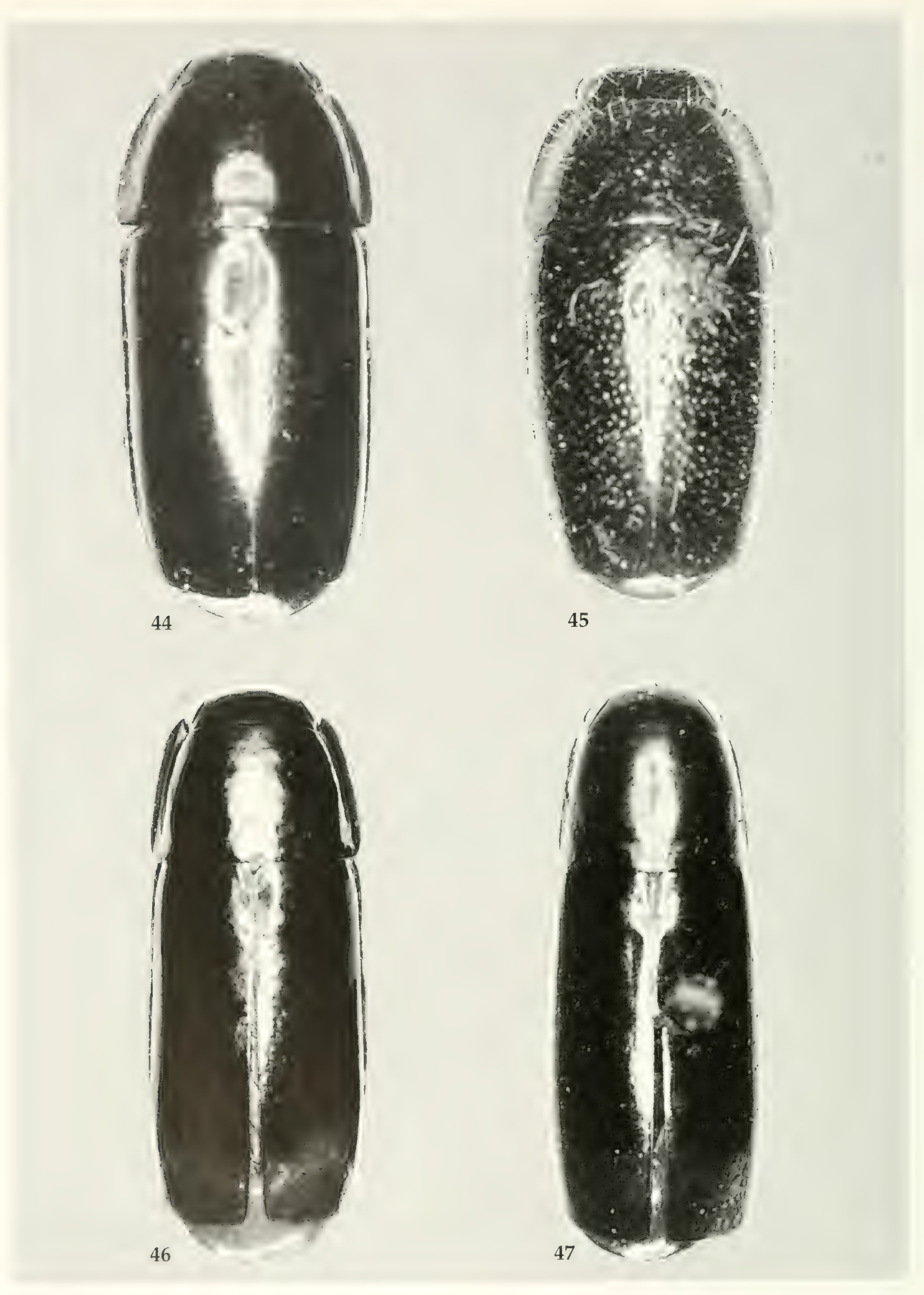
Figs 32-35. Photographs. **32.** *Adelotopus brevipennis* Macleay. **33.** *A. rufozonatus*, spec. nov. **34.** *A. atrorufus*, spec. nov. **35.** *A. marginicollis*, spec. nov. Lengths: 5.6 mm; 7.3 mm; 6.8 mm; 5.55 mm.



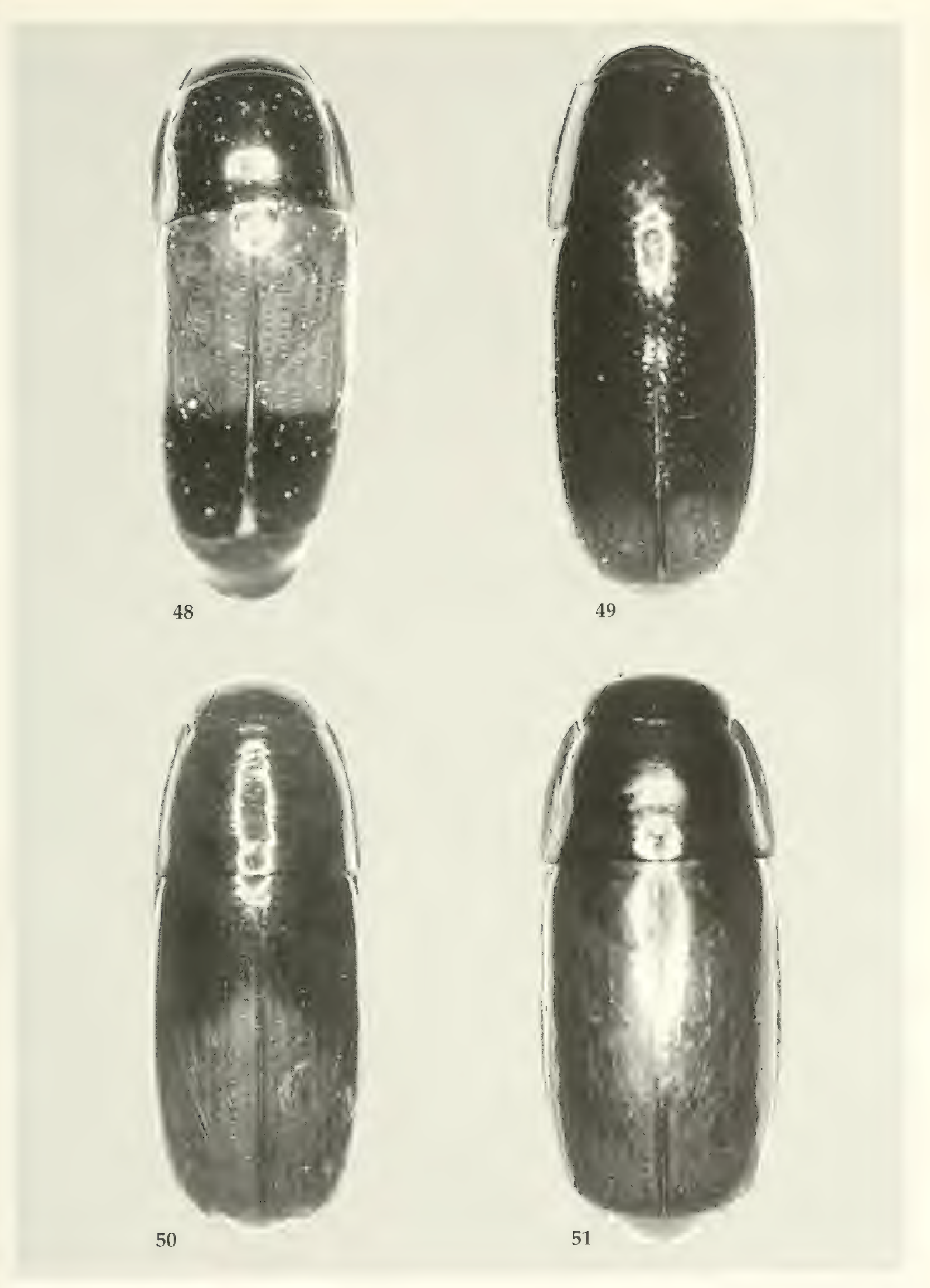
Figs 36-39. Photographs. **36.** *Adelotopus coriaceus*, spec. nov. **37.** *A. exactor* Darlington. **38.** *A. politus* Castelnau. **39.** *A. kurandae*, spec. nov. Lengths: 6.4 mm; 7.0 mm; 6.8 mm; 4.95 mm.



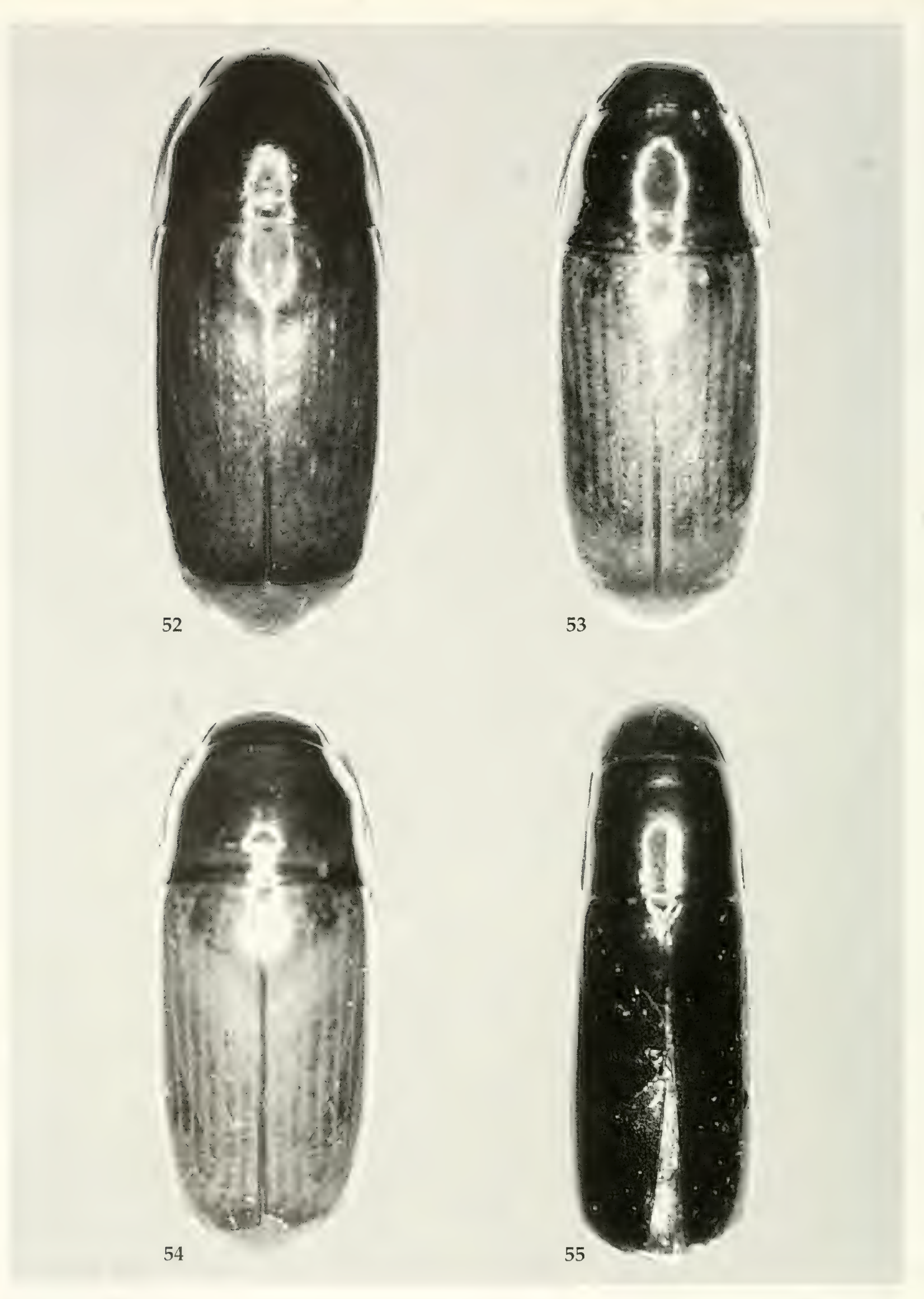
Figs 40-43. Photographs. **40.** *Adelotopus languidus*, spec. nov. **41.** *A. ovatus*, spec. nov. **42.** *A. geminus*, spec. nov. **43.** *A. nitidior*, spec. nov. Lengths: 6.0 mm; 5.6 mm; 6.3 mm; 5.6 mm.



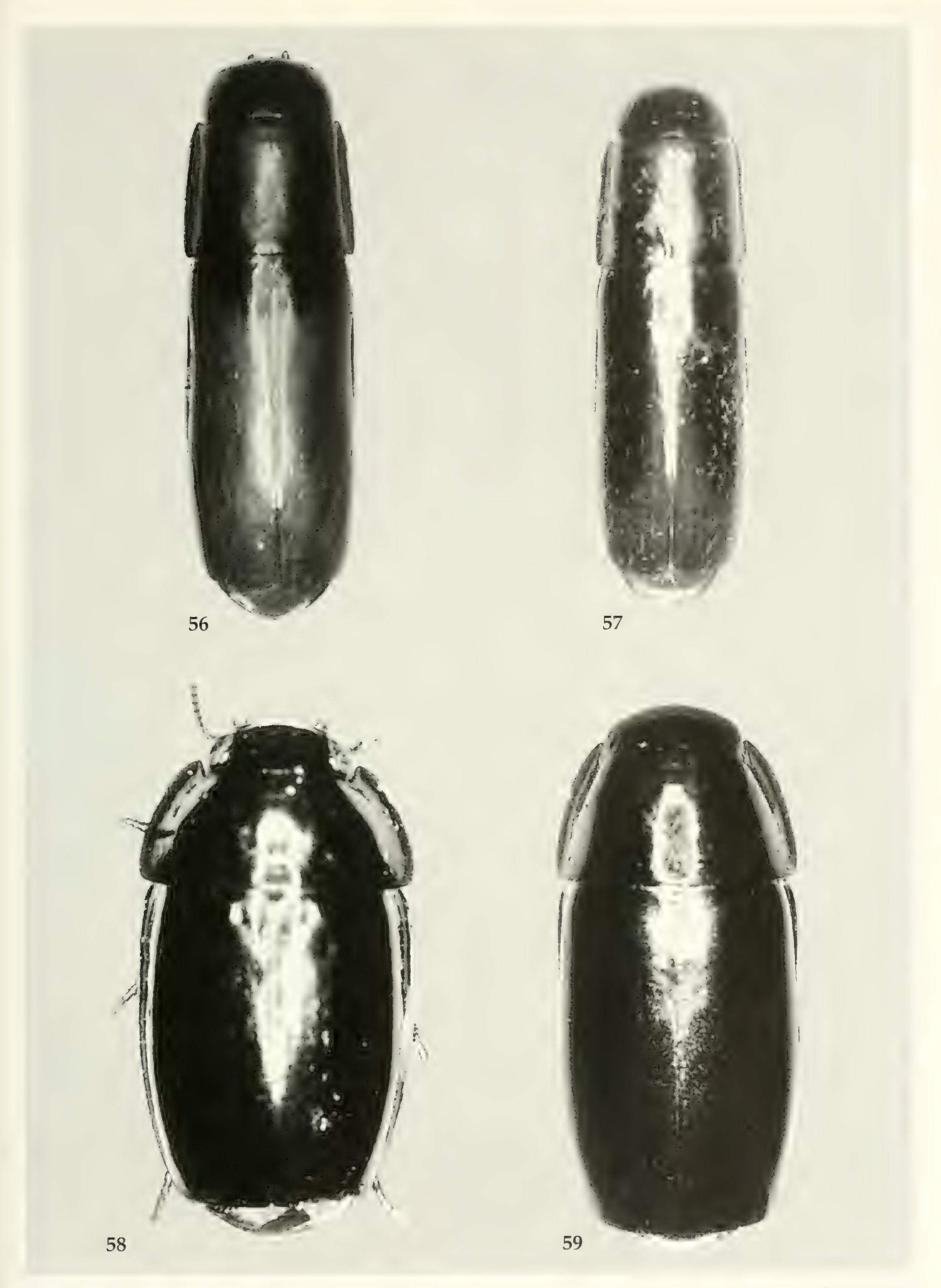
Figs 44-47. Photographs. **44.** *Adelotopus obsoletus*, spec. nov. **45.** *A. villosus*, spec. nov. **46.** *A. similis*, spec. nov. **47.** *A. tasmani* Blackburn. Lengths: 5.2 mm; 6.0 mm; 7.5 mm; 5.8 mm.



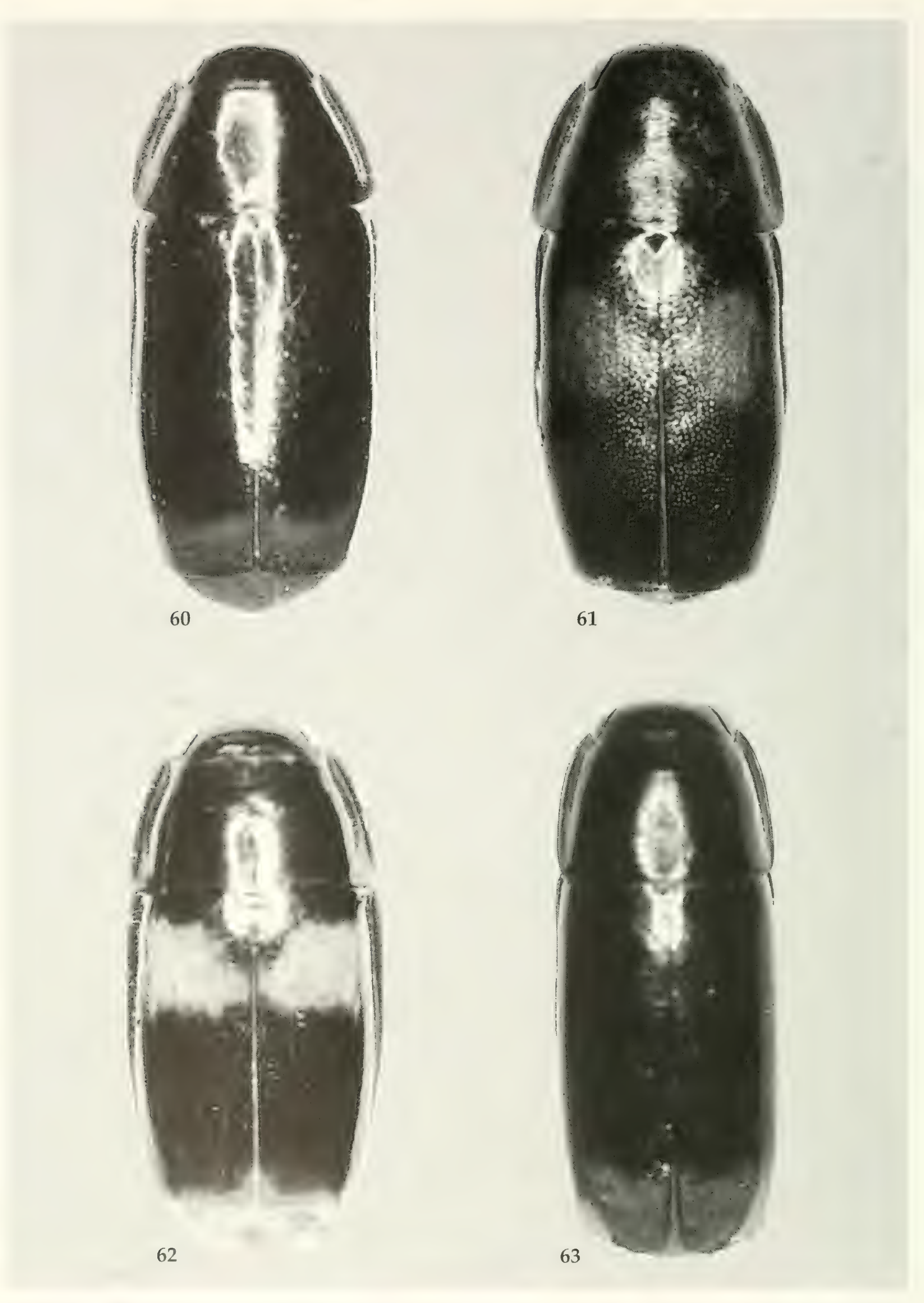
Figs 48-51. Photographs. **48.** *Adelotopus nigricauda*, spec. nov. **49.** *A. seriepunctatus striatus* subspec. nov. **50.** *A. puncticollis angustemaculatus*, subspec. nov. **51.** *A. virgatus*, spec. nov. Lengths: 4.85 mm; 5.55 mm; 4.8 mm; 5.5 mm.



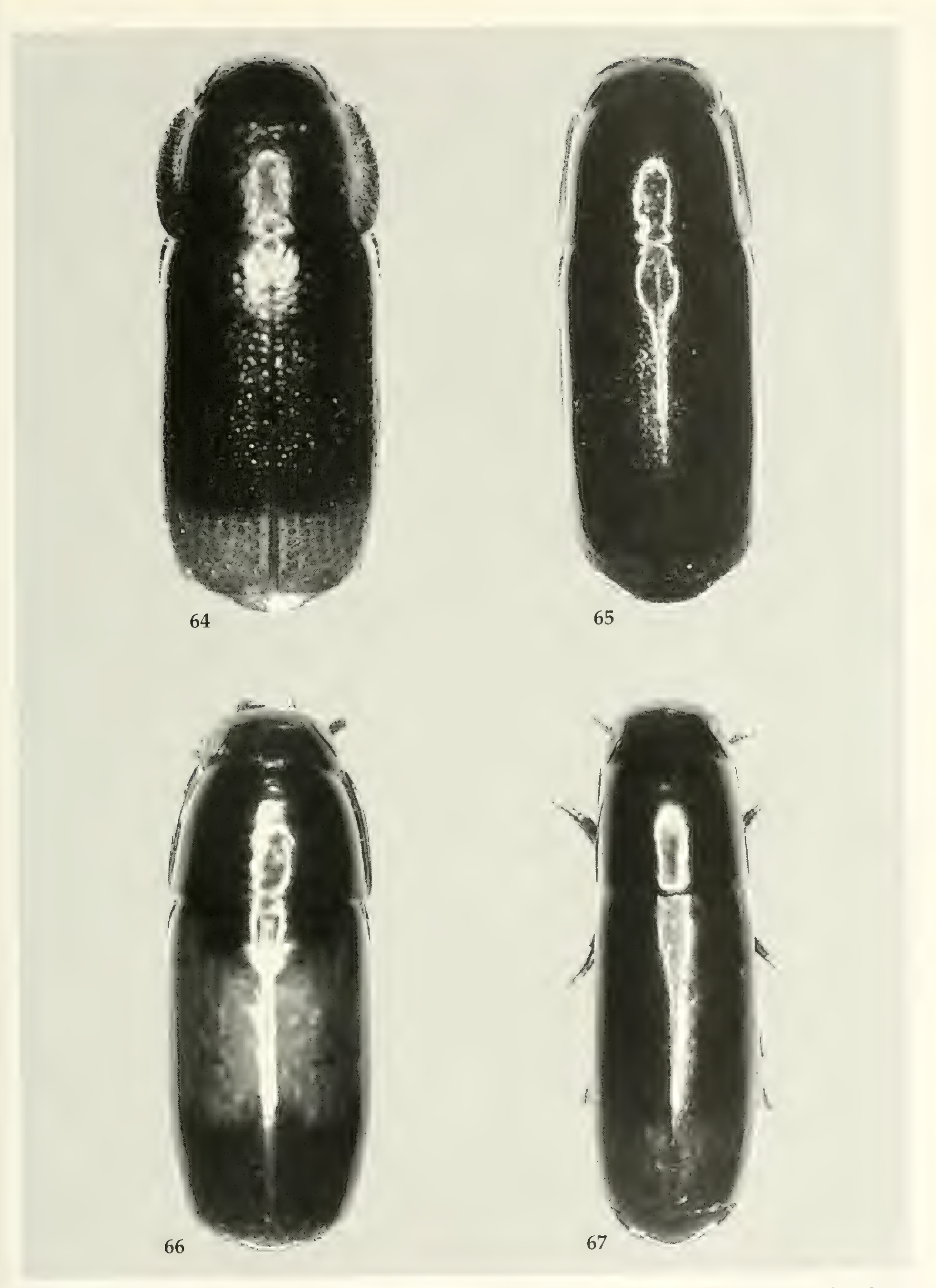
Figs 52-55. Photographs. **52.** *Adelotopus queenslandicus*, spec. nov. **53.** *A. angustatus*, spec. nov. **54.** *A. ciliatus tenuipunctatus*, subspec. nov. **55.** *A. unicolor*, spec. nov. Lengths: 4.95 mm; 5.6 mm; 5.2 mm; 4.65 mm.



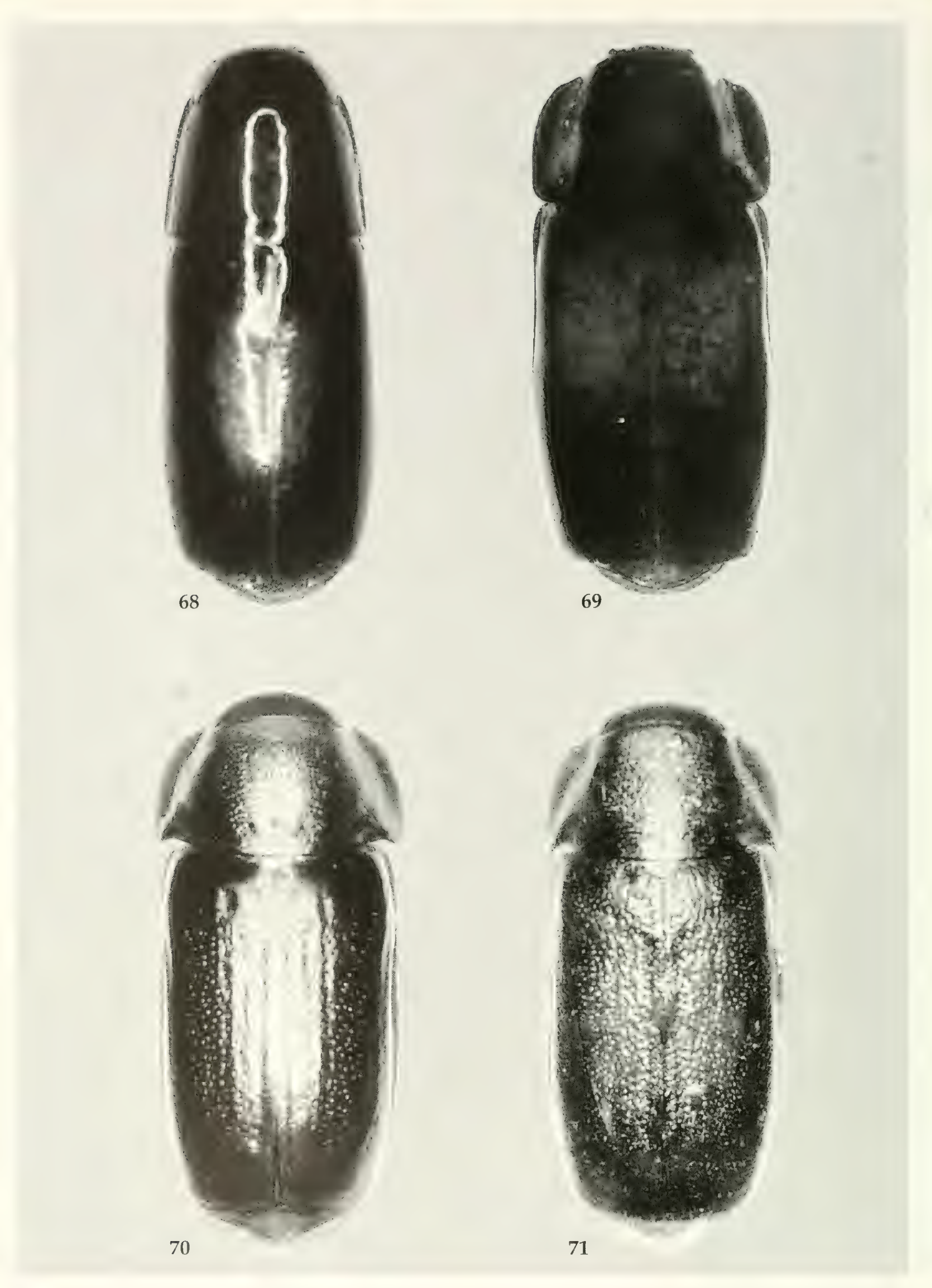
Figs 56-59. Photographs. **56.** *Adelotopus linearis* Macleay. **57.** *A. bacillus*, spec. nov. **58.** *A. celeripes* Lea. **59.** *A. gyrinoides orientalis*, subspec. nov. Lengths: 4.8 mm; 5.2 mm; 4.65 mm; 5.5 mm.



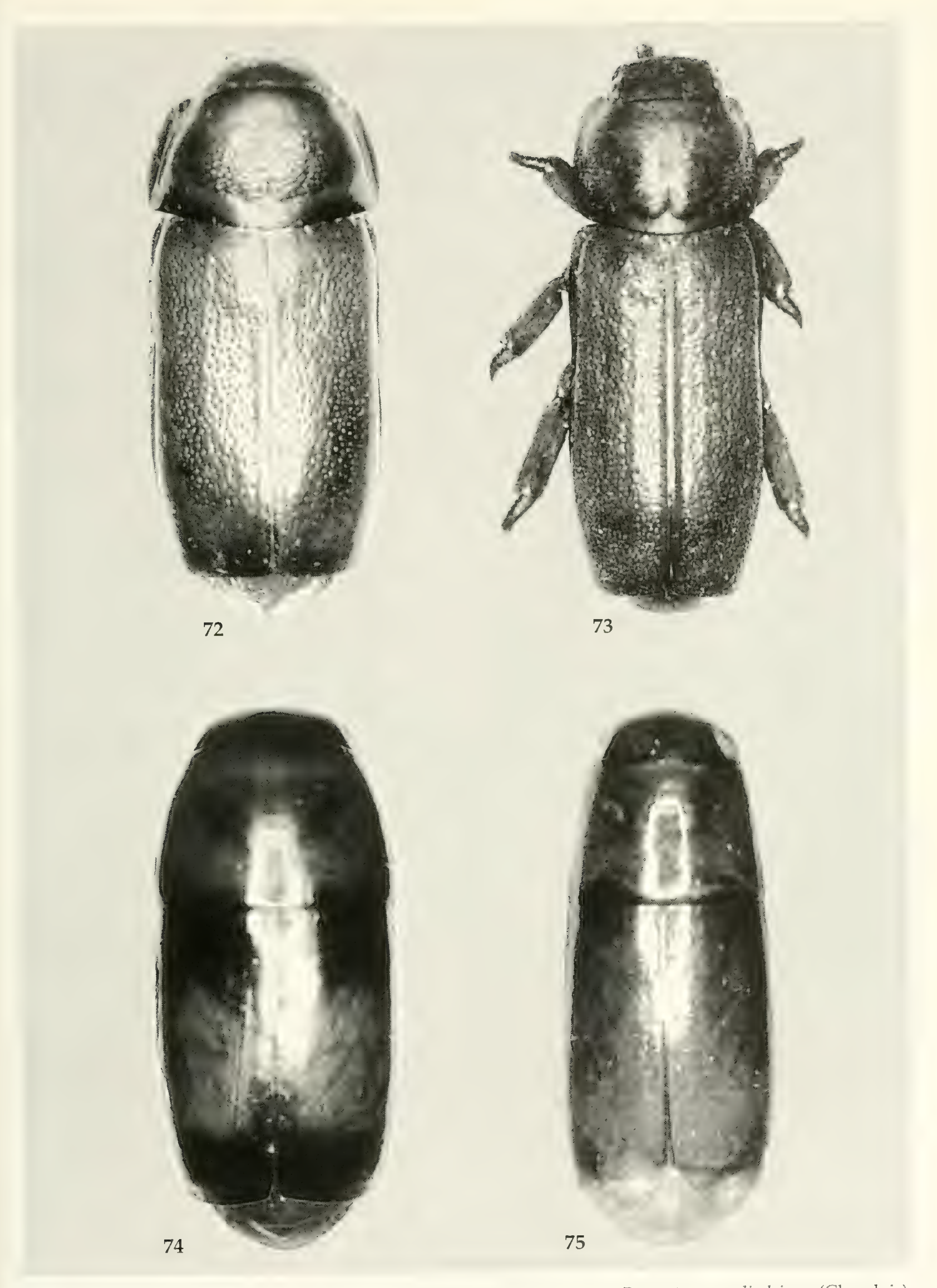
Figs 60-63. Photographs. **60.** *Adelotopus dubius glaber*, subspec. nov. **61.** *A. rufoguttatus* (Blackburn). **62.** *A. affinis* Castelnau. **63.** *A. punctulifer*, spec. nov. Lengths: 5.6 mm; 4.85 mm; 4.25 mm; 5.55 mm.



Figs 64-67. Photographs. **64.** *Adelotopus analis* Macleay. **65.** *A. paroensis* Castelnau. **66.** *A. fasciatus* Castelnau. **67.** *A. longiformis*, spec. nov. Lengths: 4.4 mm; 5.35 mm; 4.0 mm; 5.5 mm.



Figs 68-71. Photographs. **68.** *Adelotopus maculipennis* Macleay. **69.** *Cainogenion (Procainogenion) ephippiatum* (Castelnau). **70.** *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood). **71.** *C.* (s. str.) *interiore*, spec. nov. Lengths: 3.9 mm; 4.5 mm; 7.2 mm; 6.4 mm.



Figs 72-75. Photographs. **72.** *Cainogenion* (s. str.) *depressum*, spec. nov. **73.** *Paussotropus cylindricum* (Chaudoir). **74.** *Cryptocephalomorpha maior*, spec. nov. **75.** *C. papua* Darlington. Lengths: 6.6 mm; 5.9 mm; 4.4 mm; 3.0 mm.

7. Classification

7.1. Subfamily Pseudomorphinae

For extensive synonymy and for diagnosis of the subfamily see part 1. of revision.

7.1.1. Key to the genera of Pseudomorphinae

The key to the genera is basically the same as in part 1 of the revision. However, because in the meantime the genus *Pseudomorpha* has been discovered in Australia, two new subgenera of *Pseudomorpha* are being described herein, and the genus *Cryptocephalomorpha* has been found in South Africa, the key must be slightly altered. For the benefit of the reader it is repeated here:

1. Eyes dorsal **and** with a continuous border beneath. Australia, New Guinea, Solomon Islands, south-east Asia .... *Adelotopus* Hope
– Eyes dorsal or lateral, when more or less dorsal, **without** a continuous border beneath .... 2.

2. Lateral part of maxilla developed into a large, conspicuous lobe. Beneath eye with triangular process or conspicuous, large concavity. Tibiae distinctly compressed. Dorsal surface very coarsely punctate .... 3.
– Lateral part of maxilla inconspicuous. No conspicuous process or concavity beneath eye. Tibia not distinctly compressed. Surface finely punctate or at most with scattered coarse punctures, then each puncture bearing an elongate bristle .... 4.

3. Beneath eye with triangular process. Tibiae less compressed. Tarsi less thickened. Prosternal process short. Australia .... *Cainogenion* Notman
– Beneath eye with large circular concavity. Tibia very compressed. Tarsi thick. Prosternal process absent. Australia .... *Paussotropus* Waterhouse

4. Head ventrally deflexed. Labrum not visible. Mandibles tiny. Small size, body form very convex, egg-shaped species. South East Asia, New Guinea, Solomon Islands, northern Australia, South Africa .... *Cryptocephalomorpha* Ritsema
– Head prognathous. Labrum visible. Mandibles normal. Body form either cylindrical and elongate, or rather depressed and wide .... 5.

5. Margins of elytra with fringe of elongate setae. Dorsal surface commonly with scattered, elongate bristles. Mental tooth elongate, very acute. America, Australia. .... *Pseudomorpha* Kirby 6.
– Margins of elytra without fringe of elongate setae. Dorsal surface without elongate bristles, at most with short pilosity. Mental tooth either widely rounded, or slightly bidentate, or absent. Australia, New Guinea .... *Sphallomorpha* Westwood

6. Anterior margin of head without incision laterally of clypeus. Southern South America .... *Notopseudomorpha*, subgen. nov.
– Anterior margin of head with incision laterally of clypeus .... 7.

7. Body form narrow, cylindrical. Labrum 6-setose. Metepisternum quadrate, wings reduced. Australia .... *Austropseudomorpha*, subspec. nov.
– Body form usually wider, not cylindrical. Labrum 4-setose. Metepisternum elongate, wings well developed. America .... *Pseudomorpha* s. str.

7.2. Genera

Notman (1925) characterized the then known pseudomorphine genera and provided a key. In the meantime, the African genus *Hydroporomorpha* Westwood has been removed from Pseudomorphinae to the harpaline subtribe Stenolophina (see Baehr 1992a). *Adelopomorpha* Heller, included in Pseudomorphinae by Csiki (1933), was suspected to belong to Oodinae (Baehr 1992a). In the meantime examination of the type definitely revealed this status.

The other genera are well keyed out in Notman's key. Only two species have to be removed from the genera in which they were originally included, namely *Cainogenion cylindricum* (Chaudoir) to genus *Paussotropus*, and *Adelotopus insignis* Sloane to genus *Pseudomorpha*. Although the large genus *Adelotopus* is taxonomically rather heterogenous, for the present I prefer to include all species in this genus, rather than to erect several new genera. In my view this would be a procedure not justified in a group passing through a period of very rapid evolution, as *Adelotopus* does at present. Hence I prefer to divide the species in certain species-groups that could be later raised to a nomenclatorial valid status as subgenera or even genera, when better knowledge of the larvae will perhaps throw more light on the generic concept.

7.2.1. Genus *Pseudomorpha* Kirby

Pseudomorpha Kirby, 1825, p. 98; Westwood 1853, p. 395; Lacordaire 1854, p. 151; Notman 1925, p. 12, 30; Csiki 1933, p. 1637; Moore et al. 1987, p. 61.
Heteromorpha Kirby, 1825, p. 109.
Axinophorus Dejean & Boisduval, 1829, p. 60, 174.
Drepanus Dejean, 1831, p. 434.

Type species: *Pseudomorpha excrucians* Kirby, 1825, by monotypy.

Diagnosis. Genus of Pseudomorphinae, delimited by following characters: Body fairly wide to almost cylindrical, elytra posteriorly gently convex; head prognathous; eyes situated laterally, without ventral border, ventral part more or less triangular; clypeus partly or completely fused to frons; labrum separated from clypeus by a sulcus; supraorbital, clypeal, suborbital, and gular setae present, preorbital seta absent; antennal grooves deep; lateral plate of maxilla not enlarged; antenna elongate, basal antennomere simple; mental tooth elongate, triangular; glossa fused with paraglossae to a wide plate, bisetose but sometimes with additional elongate setae; labial palpi very large, markedly securiform; ventral surface of head large, not concealed by the mouth parts; prosternal process straight, rather short, depressed between coxae; number of umbilical pores of elytra variable; femora moderately or strongly compressed, with deep grooves; tibiae and tarsi not compressed, elongate; ♂ protarsus biseriately clothed at 1st and 2nd tarsomere, mesotarsus uniseriately clothed at 1st and 2nd tarsomere or not clothed; ♂ sternum VII not excised; ♂ sternum VIII apically divided, highly asymmetric; aedeagus with simply folded internal sac; parameres fairly similar, though left paramere always considerably larger; ♀ stylomeres 1 and 2 separated, though shape very variable; no distinct dorsal and ventral ensiform setae present, but nematiform setae present though sometimes very short and not always arising from a pit.

Larvae. 1st to 3rd instar larvae known of some American but not yet from any of the Australian species.

Distribution. Southwestern part of North America, Central America including the Caribbean area, and western part of South America to Argentinia; southern Australia.

Systematic position. *Pseudomorpha* is probably the adelphotaxon of all other pseudomorphine genera except for *Sphallomorpha*.

Note. The Australian species differ rather conspicuously in several respects from the American species. Hence a new subgenus *Austropseudomorpha* is proposed to accomodate the Australian species. It should be stressed, however, that the remaining (American) *Pseudomorpha* are an assemblage of species of very different phylogenetic stages including one group of (so far) two species that are plesiomorphic in many characters and do not much differ in some respects from Australian *Sphallo-*

morpha and the most plesiotypic *Adelotopus*. The other American species, however, are more or less apomorphic in external as well as in genitalic characters and form distinctive species-groups. The Australian species are more closely related to these evolved species-groups of American *Pseudomorpha*, but constitute a highly aberrant offshoot of this group (Baehr 1994a).

Although I am at present not prepared to do a revision of the American *Pseudomorpha*, for nomenclatorial correctness the unique group of very plesiomorphic South American species (namely *P. laevissima* Chaudoir and *P. glabra* Ogueta) cannot be longer included in *Pseudomorpha* proper, when the Australian species are separated in an own subgenus, but must be (at least) included in a separate subgenus that is named *Notopseudomorpha*.

A future revisor of the American *Pseudomorpha* should pay attention to these different phylogenetic stages within the genus, and for that reason a revisor should perhaps definitely divide the genus into separate genera.

7.2.1.1. Subgenus *Notopseudomorpha*, subgen. nov.

Type species: *Pseudomorpha laevissima* Chaudoir, 1852 by present designation.

Diagnosis (see figs 1, 28, 76, 97, 284): Subgenus of *Pseudomorpha*, delimited by following characters: Body fairly convex; anterior margin of head without excision near clypeus; clypeus partly fused to frons; labrum 4-setose; supraorbital, preorbital, and gular setae absent; basal antennomere of antenna simple; glossa bisetose; labial palpi markedly securiform; head without additional long setae; pronotum without elongate setae along margin and on disk, without large punctures, but with posterior marginal seta; prosternal process straight, rather short, depressed between coxae; elytra with elongate setae along margin, without setae and large punctures on surface; umbilical pores of elytra well discernable, numerous; femora strongly compressed, with deep grooves; ♂ sternum VIII apically not divided, only slightly asymmetric; aedeagus rather short, with simply folded internal sac, apex of internal sac with a narrow sclerite; parameres fairly similar, though left paramere considerably larger, both without setae at apex; ♀ stylomeres 1 and 2 separated, not very elongate; stylomere 2 of normal shape, slightly dentiform; 2 elongate nematiform setae present and arising from a pit.

Larvae. The larva of *P. laevissima* Chaudoir was described and figured by Lenko (1972).

Distribution. South America: southern Brazil, Paraguay, northern Argentinia.

Systematic position. In many respects it is the plesiotypic adelphotaxon of all other species of *Pseudomorpha*. So far two species, *Pseudomorpha laevissima* Chaudoir and *P. glabra* Ogueta, belong to this subgenus. They are in particular plesiomorphic in following character states: absence of excision at anterior border of head; absence of punctures and setae on disk of head, prothorax, and elytra; absence of fringe of marginal setae on pronotum (apart from regular posterior marginal seta in basal angle); almost symmetric, apically not as deeply excised ♂ sternum VIII; and comparatively primitive, normal-shaped ♀ stylomere 2 that is comparable to that occurring in *Sphallomorpha*.

7.2.1.2. Subgenus *Austropseudomorpha*, subgen. nov.

Type species: *Adelotopus insignis* Sloane, 1910 by present designation.

Diagnosis. Subgenus of *Pseudomorpha*, delimited by following characters: Body elongate and almost cylindrical; ventral part of eyes less triangular than in the American species; anterior margin of head with deep excision near clypeus; clypeus completely fused to frons; labrum 6-setose; one supraorbital seta only present; all fixed setae of head very elongate; antennal grooves deep and elongate; basal antennomere of antenna remarkably expanded to a large bulbus and with some pilosity; mental tooth slightly pointed down; glossa fused with paraglossae to a wide plate, with several additional elongate setae; pronotum elongate, rather cylindrical, at base as wide as or narrower than at apex; lateral margin of pronotum with some short, but without very elongate setae; number of umbilical pores of elytra reduced to 8 or 9 and arranged in two groups; dorsal surfaces of pronotum and elytra without very elongate setae; elytra fused together, wings absent, metepisternum very short; femora but moderately

compressed; ♂ mesotarsus not clothed beneath; aedeagus narrow and very elongate; ♀ stylomeres 1 and 2 both very narrow and elongate, stylomere 1 spiniform, with only a single, short seta at apex.

Larvae. Unknown.

Distribution. Australia. So far 3 species and one additional subspecies are included in this subgenus.

Systematic position. This subgenus is probably the adelphotaxon of all American *Pseudomorpha* except for those of the subgenus *Notopseudomorpha*. *Austropseudomorpha* is thus a rather basally branching offshoot of *Pseudomorpha*, but has many highly specialized character states.

7.2.1.3. Description of *Austropseudomorpha*

Because all species of *Austropseudomorpha* are very similar and differ only in minor characters, no detailed description of the subgenus beyond the above diagnosis is given, though the description of *P. (A.) insignis* (Sloane) should be consulted.

7.2.1.4. Key to the Australian species of genus *Pseudomorpha* Notman, subgenus *Austropseudomorpha*, subgen. nov.

1. Generally larger, more elongate species, length >6 mm, ratios w/l of pronotum <1.15, l/w of elytra >1.55. Lateral margins of pronotum almost parallel, base as wide as apex (Figs 285-287) .... 2.
– Generally smaller, shorter species, length <5.5 mm, ratios w/l of pronotum >1.18, l/w of elytra <1.45. Lateral margins of pronotum evenly convex, base clearly narrower than apex (Fig. 288). sw. WA .... *brevis*, spec. nov.

2. Apical angles of pronotum angulate, protruding, apex in middle but slightly convex. Excision laterally of clypeus deeper, lateral angle of excision distinctly protruding. Eyes less protruding. Median antennomeres longer, >2 × as long as wide (Figs 80c, 81c). nw. Vic, s. NSW .... 3.
– Apical angles of pronotum obtuse, barely protruding, apex in middle markedly convex. Excision laterally of clypeus shallower, lateral angle of excision barely protruding. Eyes more protruding. Median antennomeres shorter, <2 × as long as wide (Fig. 82c). s. WA ...... *subangulata*, spec. nov.

3. Pronotum and elytra with distinct but fine puncturation between the large punctures. Pilosity of surface very short, somewhat declined. Aedeagus longer, lower surface not evenly concave (Fig. 80g). w. Vic .... *insignis insignis* (Sloane)
– Pronotum and elytra without fine puncturation between the large punctures. Pilosity of surface elongate, erect. Aedeagus shorter, lower surface evenly concave (Fig. 81g). s. NSW .... *insignis pilosa*, subspec. nov.

7.2.1.5. The species of *Austropseudomorpha*, subgen. nov.

Pseudomorpha insignis (Sloane, 1910) (new combination)

This species includes two subspecies, one in northwestern Victoria, the other in southern New South Wales. Due to very scarce material, however, this taxonomic decision is somewhat doubtful and may be altered in one or another way, when sufficient material is at hand.

Diagnosis. Large, cylindrical species, distinguished from related species by large size, rather parallel lateral margins of pronotum, angulate, protruding apical angles of pronotum, deep excision in anterior margin of head with protruding lateral angle, elongate antenna, longer, rather narrow left paramere, and elongate stylomere 2.

Pseudomorpha insignis insignis (Sloane, 1910)

Figs 1, 29, 77-80, 97, 285, 437, 602

Adelotopus insignis Sloane, 1910, p. 405; Notman 1925, p. 6, 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51.

Types. Holotype: ♂, Sea Lake Goudie, 250. 5., *Adelotopus insignis* Sl. mss. Type; *A. insignis* Sl. Holotype P 19, Holotype (ANIC).

Type locality. "Sea Lake", Victoria.

Diagnosis. Distinguished from *P. insignis pilosa*, subspec. nov. by larger size, less protruding apical angles of pronotum, presence of extremely fine additional puncturation of pronotum and elytra, very short, obliquely decumbent pilosity of surface, and longer, on ventral surface not evenly concave aedeagus.

Description

Measurements. Length: 6.7-7.1 mm. Ratios. Width/length of pronotum: 0.95-1.06; width pronotum/head: 1.29-1.32; length/width of elytra: 1.60-1.63; length elytra/pronotum: 1.74-1.77.

Colour. Reddish-piceous to almost black, in dark specimens margins of pronotum and elytra and elytral suture faintly reddish translucent. Lower surface reddish to dark piceous, posterior abdominal sterna at apex slightly lighter. Mouth parts, antenna and legs dark reddish to piceous.

Head (Figs 77, 78, 80a-c, 285). Rather short and wide, frons faintly convex, between eyes with a shallow transverse impression. Lateral margin of head near eyes convex, strongly bordered, near clypeus deeply excised, the lateral angle of excision distinctly protruding. Clypeus completely fused to frons, anterior border very gently convex, slightly swollen, on lateral corner with a very elongate seta originating from a large and deep groove. Labrum short and wide, separated from clypeus by a deep furrow, base slightly overlapped by apex of clypeus, labrum directed anteriorly, apex gently convex, 6-setose. Eye rather large, gently surpassing lateral margin of head, outline rather ovalish, orbit evenly convex, rather gentle. An elongate supraorbital seta present a considerable distance inside of eye. Ventral part of eye surpassing lateral margin of head, but not as triangular as in the American *Pseudomorpha*. Antennal groove very deep, elongate, medially and laterally sharply bordered. Mental tooth rather large, triangular, apex slightly obtuse, somewhat pointed down. Wings of mentum large and wide, apex obtusely rounded. Glossa and paraglossae completely fused to a very wide plate with gently convex apex that is ventrally strongly keeled. Glossa at apical margin medially with 2 very elongate setae, laterally on either side with c. 6-8 elongate setae, also dorsal surface with elongate setae. Terminal palpomere of maxillary palpus elongate, narrow, parallel. Terminal palpomere of labial palpus very large and wide, markedly securiform. Both palpi sparsely pilose. Lateral plate of maxilla of normal size. Ventral surface of head elongate. A very elongate gular seta present on either side shortly behind base of mentum. Antenna elongate, slightly depressed, 7th-8th antennomeres >2.5 × as long as wide, 1st antennomere remarkably enlarged, bulbose, at lateral tip with the usual elongate seta and with additional short setae. Microreticulation absent, surface with very scattered coarse punctures and with an extremely fine, rather dense puncturation within the large punctures that each bears a very short, erect to slightly declined hair. Surface rather glossy. Laterally and below eye with a group of 12-15 strong, elongate setae. Gula sparsely and shortly pilose.

Pronotum (Fig. 285). Rather narrow, about quadrate, dorsal surface evenly convex, lateral margins not explanate. Base about es wide as apex. Apex gently convex, though apical angles distinctly produced and obtusely angular. Apex finely margined. Sides in middle almost parallel or very gently convex, strongly margined, lateral channel absent. Basal angles evenly rounded off, base in middle markedly concave, distinctly margined. Whole surface regularly convex, without median line. Apex near apical angles within the widened margin with 4-5 strong setae, lateral margin on and below border with few, short setae. Microreticulation absent, surface with scattered moderately coarse punctures and with extremely fine, dense puncturation within the large punctures that each bears a very short erect to slightly declined hair. Surface moderately glossy.

Elytra (Figs 29, 285, 437). Rather elongate, parallel, rather cylindrical. Apex wide, truncature gently convex, lateral apical angles widely rounded off. Base transverse, shoulders rectangular though shortly rounded off. Basal margin attaining half of distance to suture, base in middle with a deep transverse impression. Basal border wide, marginal channel very narrow, not concealed. Basal border

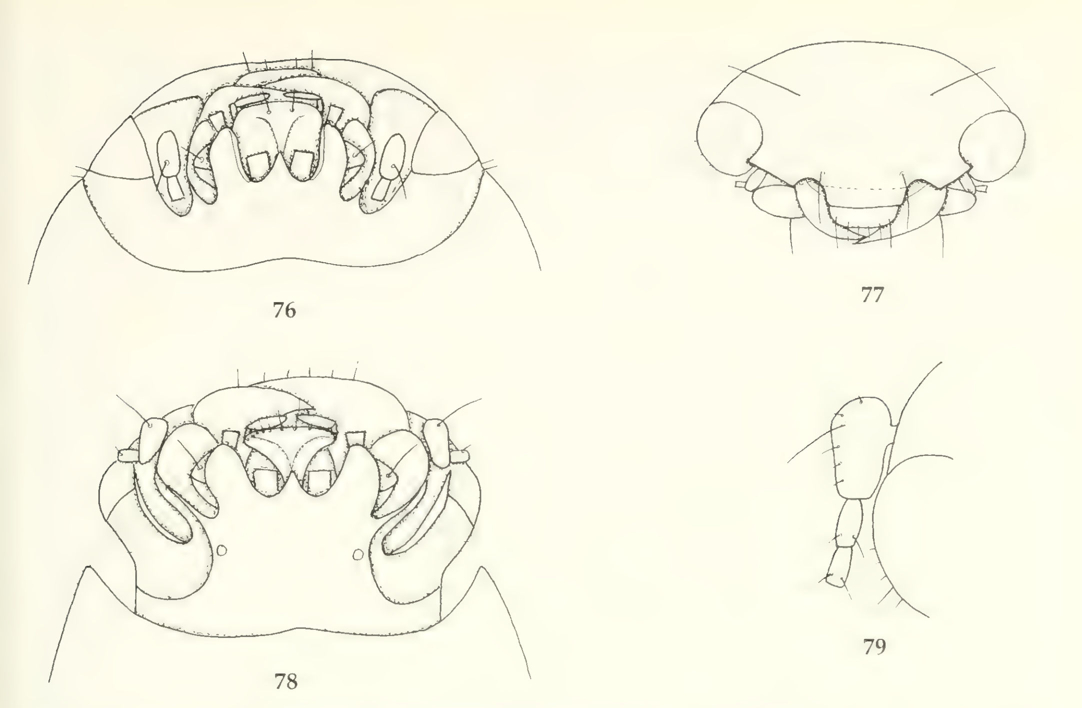


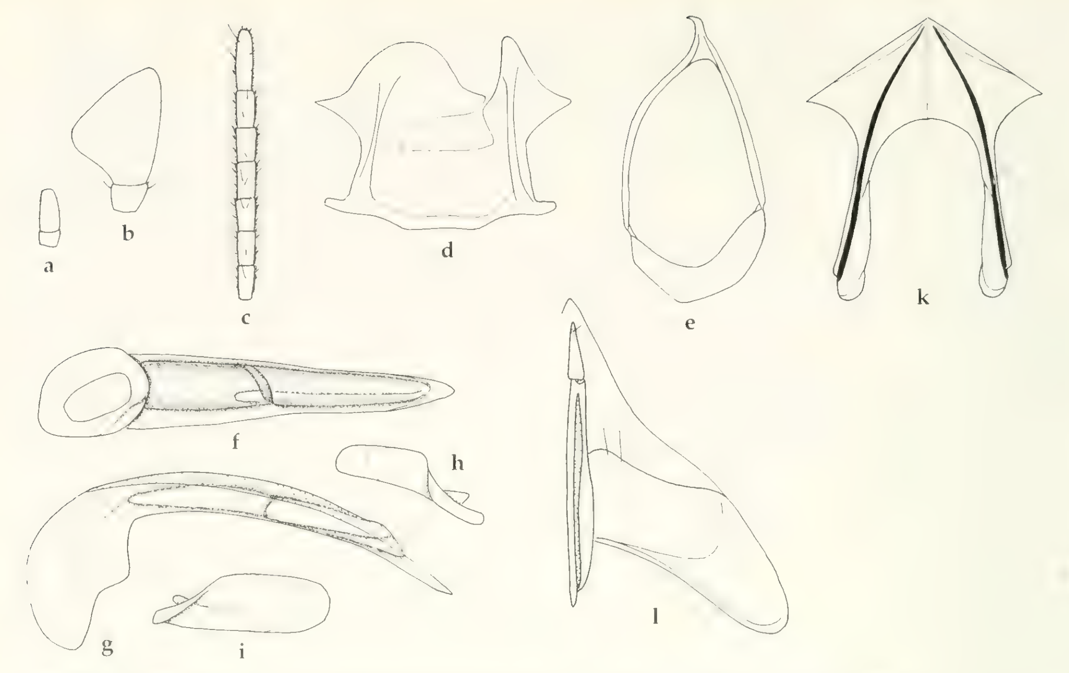
Fig. 76. *Pseudomorpha (Notopseudomorpha) laevissima* Chaudoir. Ventral view of head.
Figs 77-79. *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane). **77.** Frontal view of head. **78.** Ventral view of head. **79.** Base of left antenna.

with two rows of strong, elongate setae, also lateral margin slightly below border with a series of elongate setae. Series of umbilical pores consisting of 4-5 pores behind shoulder and 3-4 widely spaced pores in posterior third and at apex. Pores large, markedly umbilicate, easily to see, setae elongate. Scutellar pore present, large, umbilicate, seta elongate. Striae including sutural stria absent, but position of striae marked by irregular rows of moderately coarse, widely spaced punctures that each bears a short, slightly declined hair. Punctures much more coarse than those on pronotum. Microreticulation absent, between large punctures with extremely fine, dense puncturation. Surface rather glossy. Elytra tighly fused together, wings reduced.

Lower surface. Prosternal process rather short, moderately surpassing procoxae, surface depressed, margined inside of coxae, apex straight, rather depressed, surface shortly pilose. Metepisternum very short, rectangular, almost half wider than long. Abdominal sterna with a pair of elongate setae. Terminal sternum in both sexes with 3, rarely unilaterally 2 elongate setae at some distance from apex. Lower surface glossy, sparsely punctate and setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, symmetric, anterior border straight. Femora comparatively narrow and elongate, tibiae elongate, not at all widened. Metatibia elongate, c. 8 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus not widened, 1st and 2nd segents biseriately squamose, mesotarsus not squamose.

♂ genitalia (Figs 80d-i). Genital ring moderately wide, ovalish, slightly asymmetric, with rather elongate, incurved apex, with large, asymmetric, deeply excised base. Sternum VII rather narrow, apically divided, with very deep excision, base slightly bisinuate, basal angles acute, lateral parts elongate, markedly triangular. Aedeagus very elongate, narrow, depressed, slightly narrowed towards apex, faintly asymmetric. Basal part long, markedly bent. Lower surface in basal ⅔ almost straight, then more concave. Apex narrow, obtusely acute. Orifice very elongate, internal sac rather simly folded. Both parameres narrow, elongate, with rounded apex, left paramere considerably larger than right.



Figs 80a-l. *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane). Details of head and genitalia. **a.** Lower surface of terminal palpomeres of maxillary palpus. **b.** Lower surface of terminal palpomeres of labial palpus. **c.** 5th-11th antennomeres. **d.** ♂ sternum VII. **e.** ♂ genital ring. **f.** Lower surface of aedeagus. **g.** Lateral view of aedeagus. **h.** Right paramere. **i.** Left paramere. **k.** ♀ sternum VIII. **l.** ♀ stylomeres and lateral plate.

♀ genitalia (Figs 80k,l). Apex of sternum VIII rather short and wide, markedly triangular, laterally acute, basal process rather narrow and elongate. Both stylomeres very narrow and elongate, stylomere 1 completely divided, stylomere 2 spine-shaped, at apex with 1 short seta. Lateral plate elongate, rectangular, with 2-3 short medial-apical setae.

Variation. Little variation noted in relative width of pronotum and elytra only.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen collected in "drift fence pitfall trap". Dated specimens captured in January and April.

Distribution (Fig. 602). Northwestern Victoria.

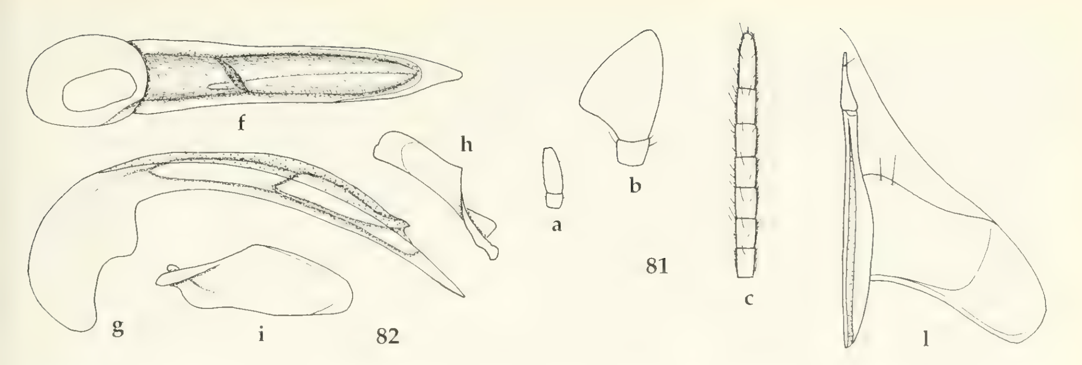
Material examined (3). **Vic:** 1♂, Sea Lake Goudie, 250. 5., *Adelotopus insignis* Sl. mss. Type; *A. insignis* Sl. Holotype P 19 (ANIC); 1♀, Sea Lake 4.1916 G. Goudie, 789 (SAMA); 1♂, 14.4 km SE of Walpeup, I.1986 35°11S 142°11'E, Site 59, A. L. Yen, *Adelotopus* sp. A, *Silphomorpha* sp. 2 (NMV).

Pseudomorpha insignis pilosa, subspec. nov.

Figs 81, 286, 602

Types. Holotype: ♂, Weddin Mt. 26.IX.23 (ANIC). – Paratypes: 1♀, Blue Mts. N. S. Wales, Glenbrook (MMS); 1♀, Australien, NSW 112, Colo River, 20 km n. Windsor, 7.-8.12.1990, M. Baehr (CBM).

Diagnosis. Distinguished from *P. i. insignis* (Sloane) by lesser size, slightly more protruding apical angles of pronotum, absence of extremely fine additional puncturation of pronotum and elytra, rather elongate, erect pilosity of surface, and shorter, on ventral surface evenly concave aedeagus.



Figs 81f-i. *Pseudomorpha (Austropseudomorpha) insignis pilosa*, subspec. nov. Details of ♂ genitalia. For legends see fig. 80.

Figs 82a-c, l. *Pseudomorpha (Austropseudomorpha) subangulata*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 80.

Description

Measurements. Length: 6.0-6.7 mm. Ratios. Width/length of pronotum: 1.09-1.15; width pronotum/head: 1.28-1.30; length/width of elytra: 1.53-1.65; length elytra/pronotum: 1.80-1.81.

Colour. Similar to nominate subspecies.

Head. Rather similar to nominate subspecies, but large punctures coarser, fine puncturation absent, surface therefore glossier, and pilosity longer and erect.

Pronotum (Fig. 286). Rather similar to nominate subspecies, but slightly wider, apical angles slightly more produced, pilosity of lateral margin longer and more conspicuous, large punctures of surface coarser, fine puncturation absent, surface therefore glossier, and pilosity longer and erect.

Elytra (Fig. 286). Rather similar to nominate subspecies, but pilosity of lateral margins longer and more conspicuous, punctures of striae markedly coarser, fine puncturation of surface absent, therefore surface glossier, and pilosity longer and erect.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia (Figs 81f-i). Similar to nominate subspecies, but aedeagus shorter, lower surface evenly concave, and right paramere with slightly widened, transversely cut apex.

♀ genitalia. Similar to nominate subspecie.

Variation. Some variation noted in relative shape of pronotum and elytra, otherwise very homogeneous.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. So far collected in September and December, one paratype collected by me at light in open eucalypt forest.

Distribution (Fig. 602). Southern New South Wales.

Material examined (3). Only the type series.

Etymology. The name refers to the distinct pilosity of the surface.

Pseudomorpha subangulata, spec. nov.

Figs 82, 287, 602

Types. Holotype: ♀, AUSTRALIA: WA, Thomas River, Cape Arid, N. Pk. 1.-5.X.1981 H. & A. Howden (ANIC).

Diagnosis. Moderately large, cylindrical species, distinguished from related species by moderate size, rather parallel lateral margins of pronotum, barely rectangular, not protruding apical angles of pronotum, more shallow excisions in anterior margin of head with lateral angle of excision barely protruding, shorter antenna, and rather elongate stylomere 2.

Description

Measurements. Length: 5.9 mm. Ratios. Width/length of pronotum: 1.05; width pronotum/head: 1.22; length/width of elytra: 1.61; length elytra/pronotum: 1.75.

Colour. Whole beetle including mouth parts, antenna, and legs reddish-piceous.

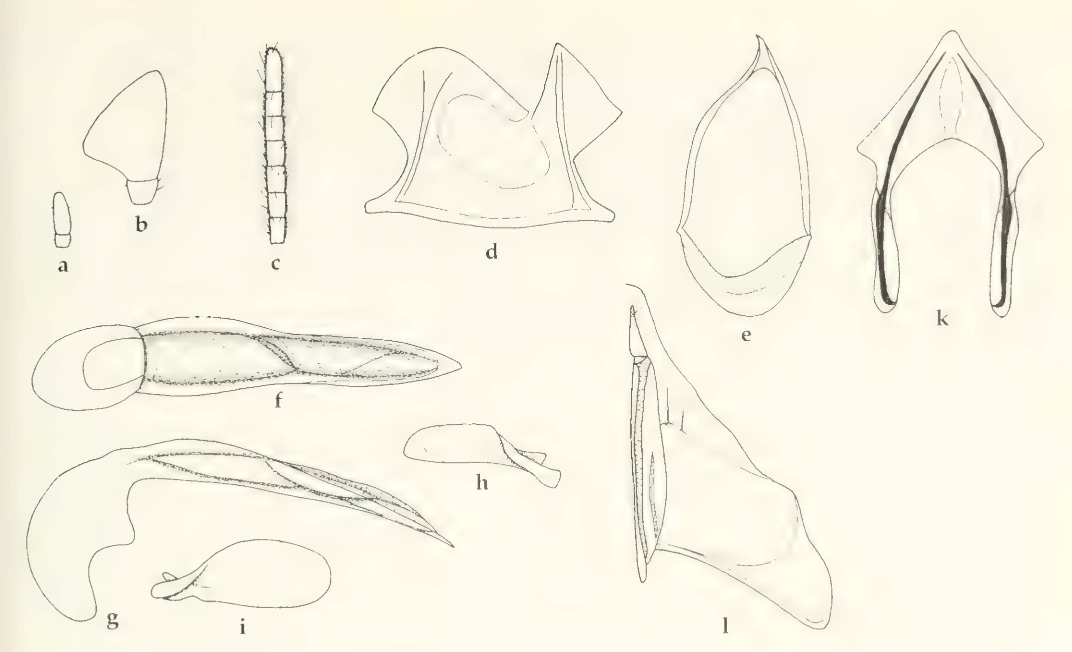
Head (Figs 82a-c). Rather short and wide, frons faintly convex, without distinct transverse impression between eyes. Lateral margin of head near eyes convex, strongly bordered, near clypeus moderately deeply excised, the lateral angle of excision barely protruding. Clypeus completely fused to frons, anterior border straight, faintly swollen, on lateral corner with a very elongate seta originating from a large and deep groove. Labrum short and wide, separated from clypeus by a deep furrow, base slightly overlapped by apex of clypeus, labrum directed anteriorly, apex almost straight, 6-setose. Eye rather large, gently surpassing lateral margin of head, outline rather triangular, orbit almost perpendicular, rather large. An elongate supraorbital seta present a considerable distance inside of eye. Ventral part of eye surpassing lateral margin of head, but not as triangular as in the American *Pseudomorpha*. Antennal groove very deep, elongate, medially and laterally sharply bordered. Mental tooth rather large, triangular, apex narrow but transversely cut, somewhat pointed down. Wings of mentum large and wide, apex obtusely rounded. Glossa and paraglossae completely fused to a very wide plate with gently convex apex that is ventrally remarkably strongly keeled. Glossa at apical margin medially with 2 very elongate setae, laterally on either side with c. 6 elongate setae, also dorsal surface with elongate setae. Terminal palpomere of maxillary palpus elongate, narrow, parallel. Terminal palpomere of labial palpus very large and wide, markedly securiform. Both palpi sparsely pilose. Lateral plate of maxilla of normal size. Ventral surface of head elongate. A very elongate gular seta present on either side shortly behind base of mentum. Antenna moderately elongate, slightly depressed, 7th-8th antennomeres <2 × as long as wide, 1st antennomere remarkably enlarged, bulbose, at lateral tip with the usual elongate seta and with additional short setae. Microreticulation absent, surface with very scattered, rather coarse punctures and with irregular, finest traces only of an extremely fine puncturation within the large punctures that each bears a rather short, anteriorly inclined hair. Surface glossy. Laterally and below eye with a group of c. 10 strong, elongate setae. Gula anteriorly sparsely and shortly pilose, posteriorly smooth.

Pronotum (Fig. 287). Rather narrow, about quadrate, dorsal surface evenly convex, lateral margins not explanate. Base about es wide as apex. Apex rather convex, apical angles slightly less than rectangular, not produced, obtusely angular. Apex finely margined. Sides in middle almost parallel, strongly margined, lateral channel absent. Basal angles evenly rounded off, base in middle markedly concave, distinctly margined. Whole surface regularly convex, without median line. Apex near apical angles within the widened margin with 4-5 strong setae, lateral margin on and below border with very few, short setae. Microreticulation absent, surface with scattered, rather coarse punctures and with finest, very superficial traces of an extremely fine puncturation only within the large punctures that each bears a very short erect to slightly declined hair. Surface rather glossy.

Elytra (Fig. 287). Rather elongate, parallel, rather cylindrical. Apex wide, truncature gently convex, lateral apical angles widely rounded off. Base transverse, shoulders rectangular though shortly rounded off. Basal margin attaining half of distance to suture, base in middle with a deep transverse impression. Basal border wide, marginal channel very narrow, not concealed. Basal border with two rows of strong, elongate setae, also lateral margin slightly below border with a series of elongate setae. Series of umbilical pores consisting of 5 pores behind shoulder and 4 widely spaced pores from middle to posterior angles, but non at apex. Pores large, markedly umbilicate, easily to see, setae elongate. Scutellar pore present, large, umbilicate, seta elongate. Striae including sutural stria absent, but position of striae marked by irregular rows of very coarse, widely spaced punctures that each bears a short, slightly declined hair. Punctures much more coarse than those on pronotum. Microreticulation almost absent, but faintest, extremely superficial traces still visible under very high magnification. Surface glossy. Elytra tighly fused together, wings reduced.

Lower surface. Prosternal process rather short, moderately surpassing procoxae, surface depressed, margined inside of coxae, apex straight, rather depressed, surface shortly pilose. Metepisternum very short, rectangular, almost half wider than long. Abdominal sterna with a pair of elongate setae. Terminal sternum in ♀ with 2 elongate setae at some distance from apex. Lower surface glossy, sparsely punctate and setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, symmetric, anterior border straight. Femora comparatively narrow and



Figs 83. *Pseudomorpha (Austropseudomorpha) brevis*, spec. nov. Details of head and genitalia. For legends see fig. 80.

elongate, tibiae elongate, not at all widened. Metatibia elongate, c. 8 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 82l). Apex of sternum VIII as in *P. insignis*, rather short and wide, markedly triangular, laterally acute, basal process rather narrow and elongate. Both stylomeres very narrow and elongate, stylomere 1 completely divided, stylomere 2 spine-shaped, laterally slightly concave, at apex with 1 short seta. Lateral plate elongate, rectangular, with 3-4 short medial-apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in October.

Distribution (Fig. 602). Southwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the less angulate apical angles of the prothorax compared with *P. insignis*.

Pseudomorpha brevis, spec. nov.

Figs 83, 288, 602

Types. Holotype: ♀, 1878, Mt. Barker W.A., Lea (SAMA). – Paratypes: 1♂, 1♀, Cape Freycinet (34.06 S, 114.59 E) Western Australia 15-18 Nov 1986 T. F. Houston 639c-18, ex pitfall trap in heath (WAM 94/876-877, CBM).

Diagnosis. Short, cylindrical species, distinguished from related species by usually smaller size, wider pronotum with rather oblique, distinctly convex lateral margins and barely rectangular, not protruding apical angles, shorter elytra, more shallow excisions in anterior margin of head with lateral angle of excision barely protruding, short antenna, short, rounded left paramere, and short stylomere 2.

Description

Measurements. Length: 4.3-5.4 mm. Ratios. Width/length of pronotum: 1.18-1.21; width pronotum/head: 1.31-1.35; length/width of elytra: 1.36-1.40; length elytra/pronotum: 1.65-1.75.

Colour. Reddish-piceous to black, margins of pronotum and elytra and elytral suture sometimes faintly reddish translucent. Lower surface reddish. Mouth parts, antenna and legs reddish.

Head (Figs 83a-c). Rather short and wide, frons faintly convex, without distinct transverse impression between eyes. Lateral margin of head near eyes convex, strongly bordered, near clypeus with rather shallow excision, the lateral angle of excision not protruding. Clypeus completely fused to frons, anterior border very gently convex, faintly swollen, on lateral corner with a very elongate seta originating from a large and deep groove. Labrum short and wide, separated from clypeus by a deep furrow, base slightly overlapped by apex of clypeus, labrum directed anteriorly, apex almost straight, 6-setose. Eye rather large, gently surpassing lateral margin of head, outline rather ovalish, orbit oblique, gently convex, rather feeble. An elongate supraorbital seta present at considerable distance medially of eye. Ventral part of eye surpassing lateral margin of head, but not as triangular as in the American *Pseudomorpha*. Antennal groove very deep, elongate, medially and laterally sharply bordered. Mental tooth rather large, triangular, apex obtuse, somewhat pointed down. Wings of mentum large and wide, apex obtusely rounded. Glossa and paraglossae completely fused to a very wide plate with gently convex apex that is ventrally strongly keeled. Glossa at apical margin medially with 2 very elongate setae, laterally on either side with c. 6 elongate setae, also dorsal surface with elongate setae. Terminal palpomere of maxillary palpus elongate, narrow, parallel. Terminal palpomere of labial palpus very large and wide, markedly securiform. Both palpi sparsely pilose. Lateral plate of maxilla of normal size. Ventral surface of head elongate. A very elongate gular seta present on either side shortly behind base of mentum. Antenna comparatively short, slightly depressed, 7th-8th antennomeres <1.5 × as long as wide, 1st antennomere remarkably enlarged, bulbose, at lateral tip with the usual elongate seta and with additional short setae. Microreticulation absent, surface with few, very scattered, rather coarse punctures that each bears a rather short, erect to anteriorly inclined hair, without any additional puncturation. Surface glossy. Laterally and below eye with a group of 10-12 strong, elongate setae. Gula anteriorly sparsely and shortly pilose, posteriorly smooth.

Pronotum (Fig. 288). Comparatively wide, dorsal surface evenly convex, lateral margins not explanate. Base clearly narrower than apex. Apex slightly convex, apical angles slightly less than rectangular, but faintly produced, obtusely angular. Apex finely margined. Sides evenly convex, posteriorly obliquely convex, strongly margined, lateral channel absent. Basal angles evenly rounded off, base in middle markedly concave, distinctly margined. Whole surface regularly convex, without median line. Apex near apical angles within the widened margin with 4-5 strong setae, lateral margin below border with several moderately short setae. Microreticulation absent, surface with very scattered, moderately coarse punctures each of which bears a short, erect to slightly declined hair. Surface without additional puncturation, glossy.

Elytra (Fig. 288). Rather short, parallel, rather cylindrical. Apex wide, truncature gently convex, lateral apical angles widely rounded off. Base transverse, shoulders rectangular though shortly rounded off. Basal margin attaining half of distance to suture, base in middle with a deep transverse impression. Basal border wide, marginal channel very narrow, not concealed. Basal border with two rows of strong, elongate setae, also lateral margin slightly below border with a series of elongate setae. Series of umbilical pores consisting of 5 pores behind shoulder and 4 widely spaced pores from in front of middle to posterior angles, but none at apex. Pores large, markedly umbilicate, easily to see, setae elongate. Scutellar pore present, large, umbilicate, seta elongate. Striae including sutural stria absent, but position of striae marked by irregular rows of very coarse, widely spaced punctures that each bears a short, slightly declined hair. Punctures much more coarse than those on pronotum. Microreticulation and additional puncturation absent. Surface highly glossy. Elytra tighly fused together, wings reduced.

Lower surface. Prosternal process rather short, moderately surpassing procoxae, surface depressed, margined inside of coxae, apex straight, rather depressed, surface shortly pilose. Metepisternum very short, rectangular, a half wider than long. Abdominal sterna with a pair of elongate setae. Terminal sternum in the male with 1, in both females with 2-3 elongate setae at some distance from apex. Lower surface glossy, sparsely punctate and setose.

Legs. Moderately elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur moderately deep, symmetric, anterior border straight. Femora comparatively narrow and

elongate, tibiae elongate, not at all widened. Metatibia elongate, c. 7 × as long as wide, 1st tarsomere of metatarsus slightly <2 × as long as wide. ♂ protarsus unknown.

♂ genitalia (Figs 83d-i). Genital ring rather narrow and parallel, asymmetric, with rather elongate, incurved apex, with very elongate, asymmetric, deeply excised base. Sternum VII rather narrow, apically divided, with very deep excision, base very faintly bisinuate, basal angles acute, lateral parts elongate, markedly triangular. Aedeagus very elongate, narrow, depressed, slightly narrowed in middle, faintly asymmetric. Basal part long, markedly bent. Lower surface almost straight. Apex narrow, obtusely acute. Orifice very elongate, internal sac rather simply folded. Right paramere rather narrow, elongate, with rounded apex, left paramere considerably larger than right, short and wide.

♀ genitalia (Figs 83k,l). Apex of sternum VIII rather narrow and elongate, markedly triangular, laterally acute, basal process narrow and elongate. Both stylomeres narrow and elongate, though shorter than in other species, stylomere 1 completely divided, stylomere 2 spine-shaped, at apex with 1 short seta. Lateral plate elongate, rectangular, with 2 short medial-apical setae.

Variation. There is considerable variation of size and colour, otherwise a homogenous species.

Vivipary. Not confirmed in the examined material.

Habits. Little known. Holotype undated, mounted on same card with ants of the genus *Crematogaster* Lund, both paratypes collected "ex pitfall trap in heath" in November.

Distribution (Fig. 602). Southwestern corner of Western Australia.

Material examined (3). Only the type series.

Etymology. The name refers to the short body.

7.3. Genus *Adelotopus* Hope

Adelotopus Hope, 1834, p. 11; Erichson 1842, p. 95; Westwood 1853, p. 403; Lacordaire 1854, p. 153; Sloane 1920, p. 177; Notman 1925, p. 6, 28; Csiki 1933, p. 1634; Darlington 1968, p. 240; Matthews 1980, p. 10; Moore 1983, p. 78; Moore et al. 1987, p. 49.

Type species: *Adelotopus gyrinoides* Hope, 1834, by monotypy.

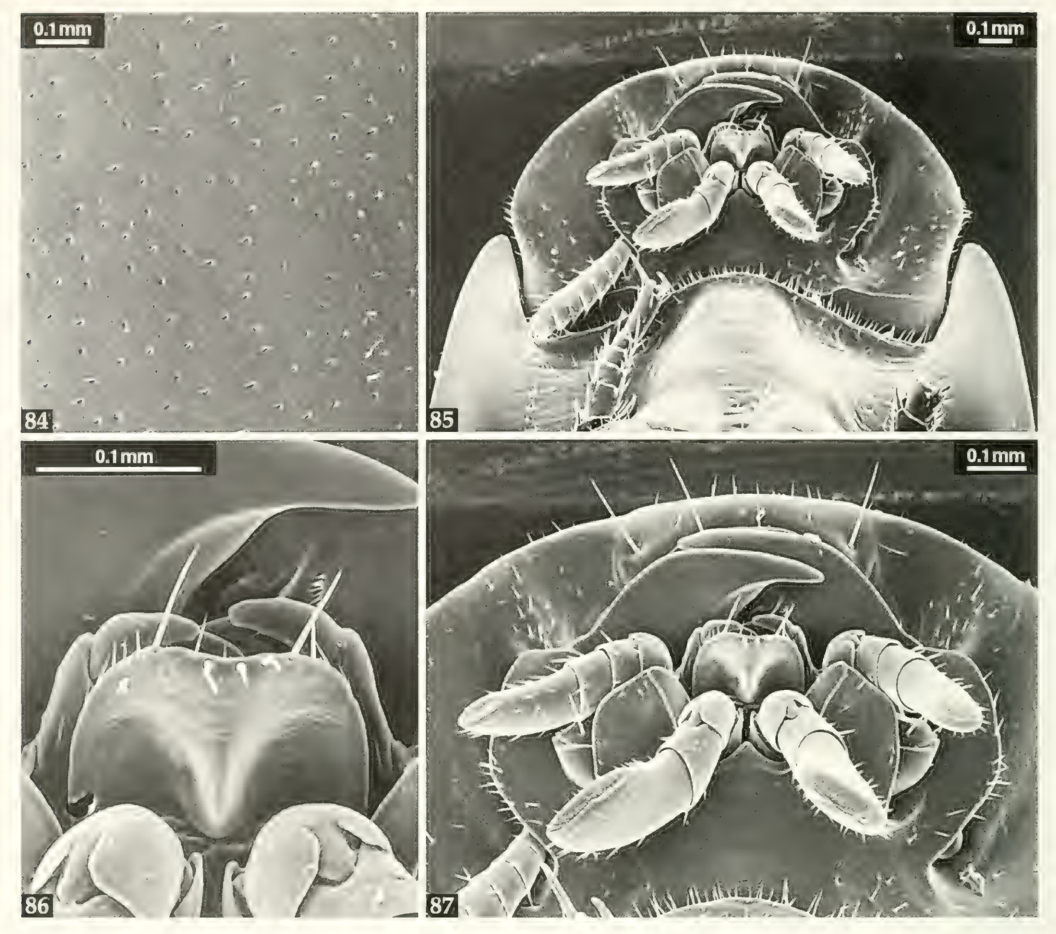
Diagnosis. Genus of Pseudomorphinae, delimited by following characters: Body fairly wide to very narrow, even cylindrical; head prognathous but directed downward, rather deeply imbedded in prothorax; eyes situated laterally, with sharp ventral border; clypeus partly fused to frons; labrum markedly divided from clypeus, commonly rather overlapped by clypeus; supraorbital, preorbital, suborbital, mental, and gular setae absent; antennal grooves deep and elongate, ventrally widely overlapped by large, foliaceous plates; antenna short, antennomeres more or less moniliform; glossa wide, tongue-like, with several elongate apical setae; at least labial palpi markedly securiform; ventral surface of head short, partly concealed by the mouth parts; prosternal process of pronthorax moderately elongate; number of umbilical pores of elytra reduced; femora and tibiae rather compressed, femora with deep grooves; tarsi moderately elongate; male sternum VII not excised; sternum VIII not divided, asymmetric; aedeagus with more or less complex internal sac; parameres fairly similar, though left paramere considerably larger; female stylomeres 1 and 2 fused, foliaceous; without distinct dorsal ensiform seta, ventral ensiform setae, or nematiform setae, but with variable number of apical or subapical setae on medio-apical surface not situated in a pit.

7.3.1. Description of *Adelotopus*

Species of *Adelotopus* exhibit the following character states:

Size and shape. Small to moderately large species (c. 3.5-10.5 mm) of rather wide and depressed to elongate, highly convex, and cylindrical form.

Colour and pattern (Figs 100-225). Surface either unicolourous black or piceous, or more or less light reddish, or patterned in various ways: either with apex of elytra more or less widely and distinctly reddish, or with base of elytra reddish, or with base of elytra narrowly black and rest red, or with reddish sutural stripe or spot of variable shape, or with both, sutural spot and apex of elytra

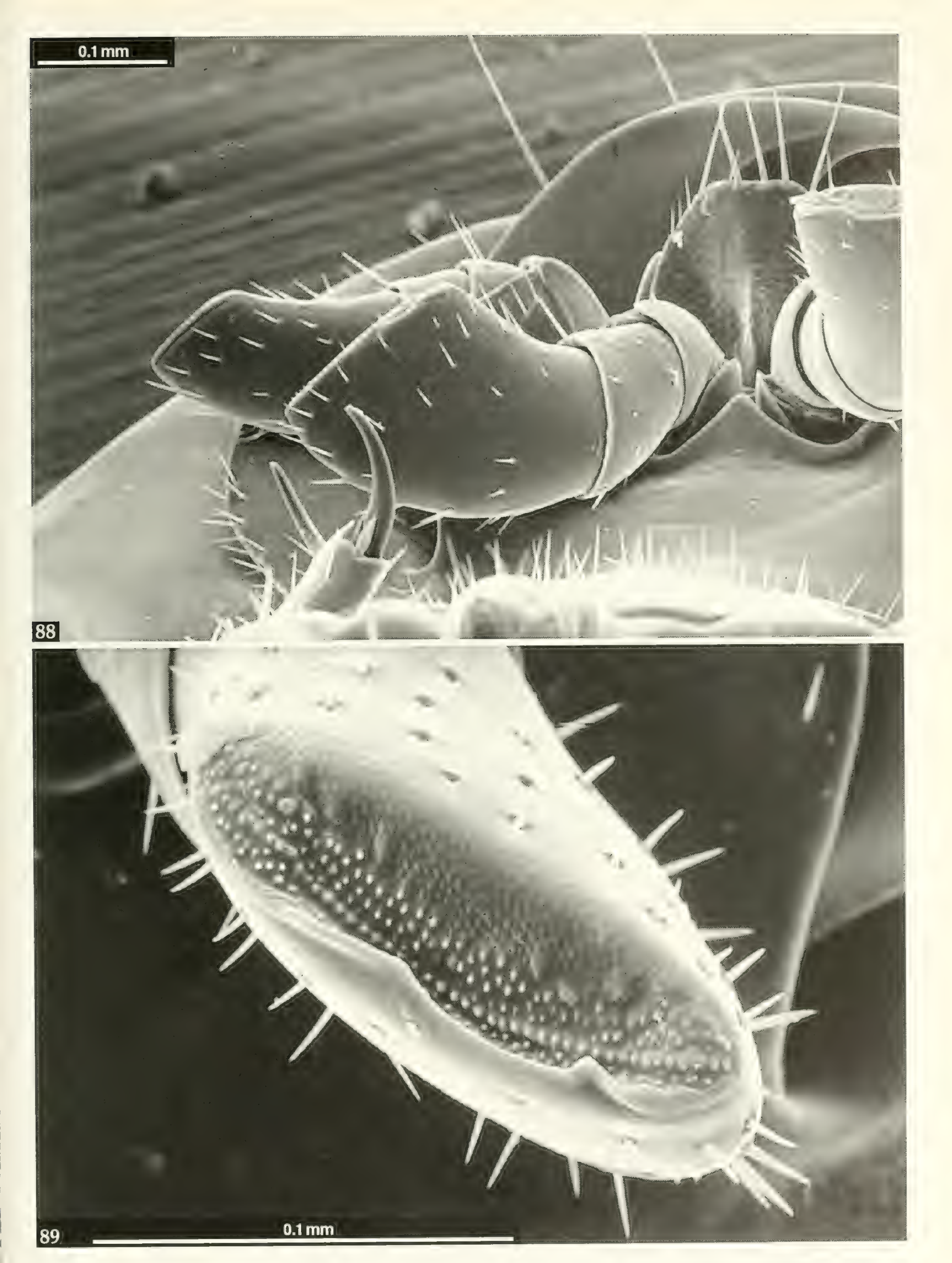


Figs 84-87. *Adelotopus paroensis* Castelnau. **84.** Surface of left elytron. **85.** Ventral surface of head. **86.** Labium and Galeae. **87.** Mouth parts, ventral view.

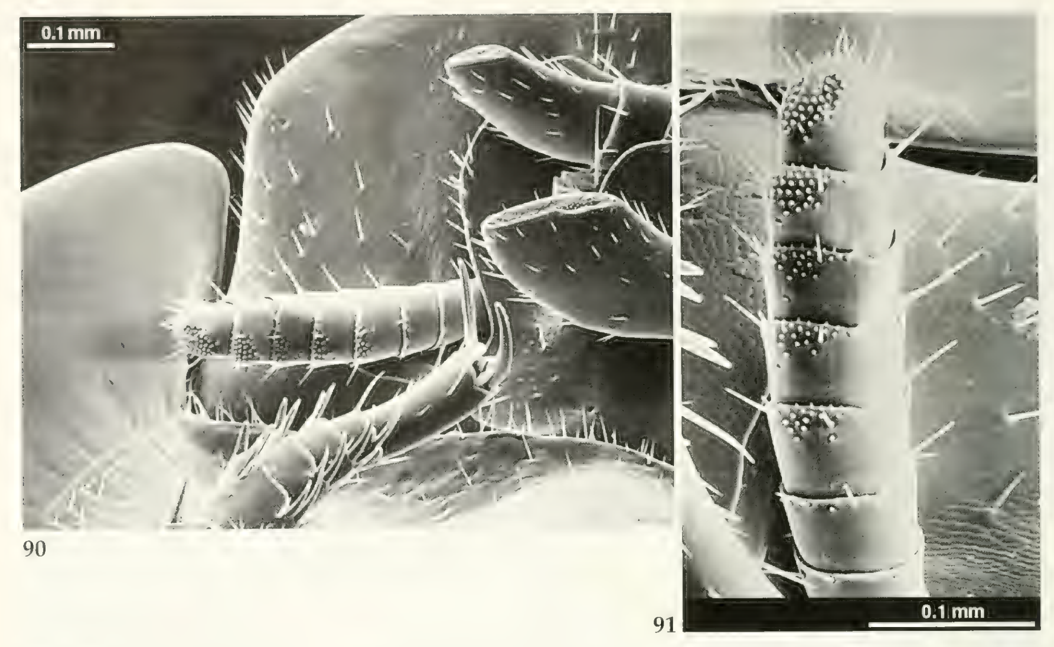
reddish, or bicolourous with head and pronotum black and elytra reddish, or with more or less distinctly lighter lateral margins of pronotum and elytra. Ventral surface usually slightly lighter than dorsal surface, especially abdomen commonly reddish or becoming lighter towards apex. Some species with the commonly protruding terminal tergite reddish and contrasting to the dark elytra. Mouth parts, antennae, and legs mostly reddish or reddish-piceous, commonly lighter than rest of body.

Microsculpture (Figs 438-566). Dorsal surface with marked to very fine microreticulation, or without any microreticulation, or microreticulation present on head or on head and pronotum only. Surface commonly also with more or less fine and dense puncturation, this commonly different on head, pronotum, and elytra. Elytral striae usually indistinct or absent, in few species distinct, though usually marked only by rows of punctures and/or fine, longitudinal strioles. Elytral intervals slightly convex in few species. Surface without or with fine pilosity, in few species with conspicuous, elongate, erect hairs.

Head (Figs 84-91, 98, 99). Short and rather wide, deeply imbedded in the prothorax, somewhat orthognathous, mandibles directed rather downwards. Surface slightly convex. Eyes large, ventrally with sharp margin, laterally not protruding, though commonly head laterally slightly projecting, in some species even gently angulate, then lateral margin of head posteriorly of eyes more or less



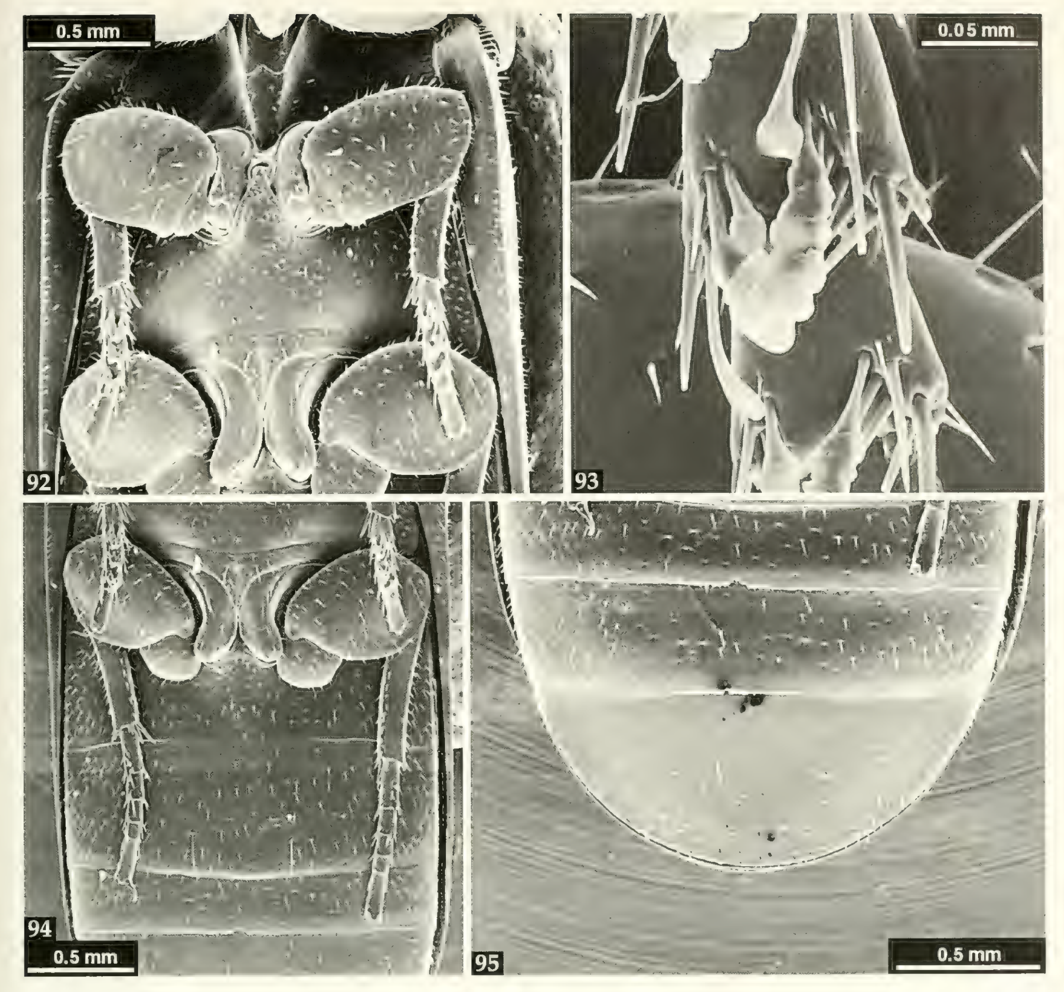
Figs 88-89. *Adelotopus paroensis* Castelnau. **88.** Right maxillary and labial palpus, ventral view. **89.** Apical part of labial palpus, terminal view.



Figs 90-91. *Adelotopus paroensis* Castelnau. **90.** Right antenna, right anterior tarsus, ventral view. **91.** Right antenna, ventral view.

distinctly oblique and narrowed. Ventro-posteriorly of eyes with a row of short bristles, sometimes also ventral part of orbits with a punctate and shortly setose area. Clypeus fused to frons, bisetose, clypeal suture rather indistinct, commonly in middle widely interrupted, clypeus anteriorly slightly surpassing margin of head, border straight. Labrum rather wide and short, divided from clypeus by deeply impressed suture, in several species-groups even rather widely overlapped by the clypeus. Anterior margin of labrum more or less deeply excised, labrum bisetose or quadrisetose. Mandibles wide, depressed, without scrobe, regularly curved, usually mostly concealed by labrum. Mentum not divided from submentum by a suture, with distinct, more or less elongate, acute, unidentate tooth. Gula very short, without distinct gular sutures. Glossa very large, tongue-like, directed ventro-posteriorly, margin with several (c. 6-16) elongate setae, dorsal surface usually shortly pilose. Paraglosse not visible, perhaps completely fused to glossa. Lateral lobes of mentum moderately elongate, wide, commonly apically rounded or obtuse. Labial palpus larger than maxillary palpus, terminal article always distinctly securiform, sometimes extremely wide. Terminal article of maxillary palpus rather narrow and parallel to moderately securiform. Terminal palpomeres of both palpi on upper surface rather densely setose, on lower surface almost asetose, apes with glandulose groove, rim with a very short row of minute hairs. Galea and lacinia small to very small, elongate, completely covered by the glossa, not visible from below and so deeply hidden below the glossa that they presumably do not play an important role in the process of absorption of food. Lacinia slightly curved, with a fine fringe of setae along inner border. Antenna inserted below eye, in deep antennal groove between ventral surface of eye and orbit and laminate lateral plate of maxilla. Lateral border of antennal groove usually angulate or carinate. Antenna short to very short, more or less depressed and widened in apical half, with preapical antennomeres from almost 3 × as wide as long to about square. Lateral margin of antenna more or less densely hirsute, middle glabrous. apex of terminal antennomere and latero-apical parts of 7th to 10th antennomeres glandulose. Apart from the clypeal and labral setae no additional fixed setae on head, though whole lower surface in some species covered by more or less elongate and dense pilosity.

Microreticulation of head distinct, or more or less superficial, or absent; when present, usually consisting of isodiametric meshes. Puncturation usually present, though generally rather fine or very fine, in some species even not visible within the distinct microreticulation. Medially of eyes usually



Figs 92-95. *Adelotopus paroensis* Castelnau. **92.** ♂ median leg, ventral view. **93.** Adhesive setae of ♂ anterior tarsus. **94.** Posterior leg of ♂, ventral view. **95.** Apex of ♂ abdomen, ventral view.

with shallow sulcus. In some species surface with more or less dense, though usually very fine wrinkles or lines, surface withouth or with mostly very short and sparse pilosity, rarely with elongate erect hairs.

Prothorax (Figs 100-225). Pronotum about as wide as elytra, apical margin more or less deeply excised and apical angles protruding, though to a different degree. Apical angles acute or obtuse, or almost rounded off, usually rather oblique. Lateral margins slightly to markedly convex. Basal angles angulate, or obtuse, or more or less widely rounded off. Basal margin straight, or concave, or slightly convex. Apex and base more or less distinctly bordered, lateral margins very finely bordered, in some species only border rather coarse. Shape of pronotum varied from very wide, rather depressed, with explanate lateral margins, to narrow, elongate, highly convex, almost cylindrical with extremely narrow lateral margins. Commonly lateral margins rather chanelled. Basal part of pronotum in some species with shallow, transverse impression across surface. Microreticulation coarse, or feeble, or absent, puncturation varied, in some species laterally coarser and denser than in middle, surface very dull to highly glossy. Commonly surface with a faint network of irregular strioles, or microsculpture rugose. Apical and basal angles without setae. Surface without or with short and sparse pilosity, in few species with elongate erect hairs. Sternum with a rather short to moderately elongate sternal process

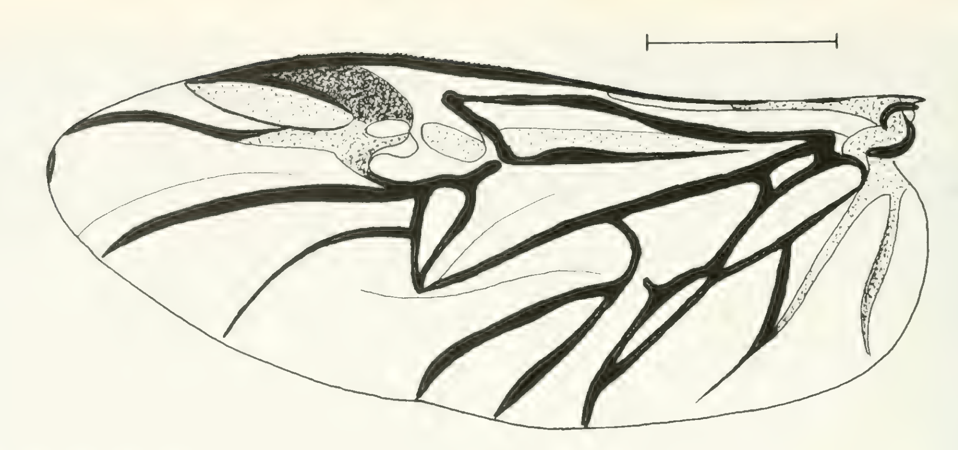


Fig. 96. *Adelotopus paroensis* Castelnau. Left wing. Scale: 1 mm.

of varied shape, commonly this process shortly setose. Sternum bordered along anterior margin of procoxae.

Elytra (Figs 100-225). Free. More or less elongate and convex, or even cylindrical. Lateral margins rather parallel, or gently convex, commonly faintly excised in basal third. Base laterally rounded or oblique, shoulders obtuse or almost rounded off, apex rather wide, slightly concave to gently convex, lateral apical angles rounded. Lateral margin more or less wide, chanelled, in some species extremely narrow, not covered to almost completely covered when seen from above. Epipleura on ventral surface, not visible from above. Basal border complete or reduced to different degree, or reaching only to lateral third of base. Striae most commonly absent, in some species present and then indicated as rows of punctures and/or longitudinal strioles, striae generally barely impressed, hence intervals depressed. Surface microreticulate or not, most commonly rather glossy or very glossy. Puncturation variable, fine to very coarse, more or less dense, rarely almost invisible within the distinct microreticulation. Scutellar seta generally absent, present only in very few species. Umbilical pores few in number, rarely more than 7, of which 6 are situated behind shoulders, sometimes with an additional seta at or shortly behind middle. In several species number of setae even more reduced. Base in front of shoulders with a row of elongate hairs, sometimes also with some hairs behind shoulders, in some species anterior half or two thirds of lateral margin covered by rather elongate hairs. Surface without or with short and sparse pilosity, in few species with elongate, erect hairs.

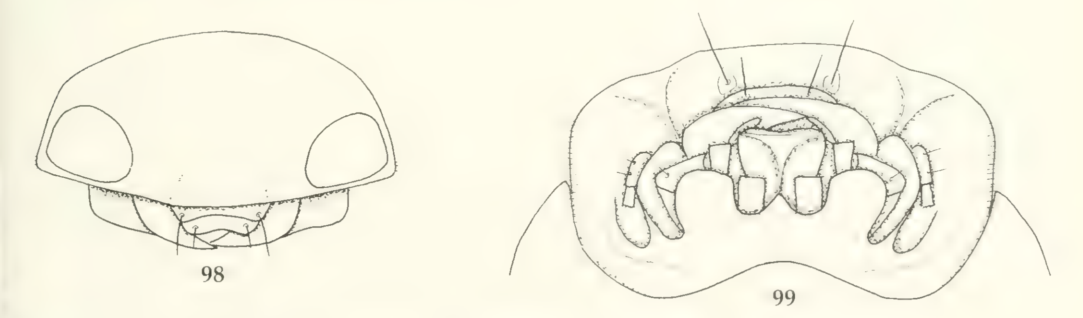
Wings (Fig. 96). Fully developed.

Ventral surface (Fig. 95). Anterior coxae biperforate and closed. Median coxal cavities conjunct. Metepisternum more or less elongate, c. 1.5-2.3 × as long as wide at anterior border, in some species posteriorly obliquely bent and hollowed for reception of metafemur and metatibia. Abdominal sterna with one or two setae on either side of posterior margin, rarely with a row of setae. Sternum VII sometimes with a row of longer bristles along apical margin, generally without tactile setae. Lower surface more or less densely pilose.

Legs (Figs 92-94). Moderately elongate. Femora large, wide, depressed, with deep furrow on ventral surface to receive most of tibiae. Furrows asymmetric, in profemur on posterior side, in mesofemur and metafemur on anterior side with large plate that widely overlaps the furrow. Tibiae moderately elongate, somewhat depressed, tarsi rather short, slightly depressed dorsoventrally. 1st tarsomere of protarsus not or but feebly longer than wide, 1st tarsomere of metatarsus c. 1.5 to almost 3 × as long as wide. Ventral surface of tarsi asetose apart from fixed setae and of a single pair of setae on ventral surface of 5th tarsomere. Dorsal surface of tarsi asetose. 1st-3rd tarsomeres of male protarsus with two rows of adhesive pads, mesotarsus without such pads. Tarsal claws smooth.

Male genitalia (100-225). Sternum VIII not divided, asymmetric, with asymmetric excision of different form at apex. Genital ring variously shaped, though in most species more or less triangular. Basal plate usually anteriorly more or less excised. Aedeagus conchiferous, of very different size and shape, form in some species highly characteristic, within several species-groups, however, basically similar. Internal sac more or less folded in complex pattern, in some species with characteristic oblique

Fig. 97. Female external genitalia of Pseudomorphinae, dorsal view. Above, from left: *Sphallomorpha maculigera* (Macleay), *Pseudomorpha (Notopseudomorpha) laevissima* (Chaudoir), *Pseudomorpha (Austropseudomorpha) insignis* (Sloane), *Pseudomorpha (Pseudomorpha) behrensi* Horn. – Below, from left: *Adelotopus dytiscides* Newman, *Cainogenion* (s. str.) *ipsoides* (Westwood), *Paussotropus cylindricus* (Chaudoir), *Cryptocephalomorpha papua* Darlington. Abbreviations: **des:** dorsal ensiform seta; **lp:** lateral plate; **ns:** nematiform seta(e); **ves:** ventral ensiform seta(e); **st1:** stylomere 1; **st2:** stylomere 2; **VIII:** sternum VIII.



Figs 98-99. *Adelotopus dytiscides* Newman. **98.** Frontal view of head. **99.** Ventral view of head.

fold in apical part. Orifice commonly elongate, situated in middle. Parameres moderately to rather dissimilar, left paramere considerably larger than right.

Female genitalia (Figs 97, 100-225). Stylomeres 1 and 2 fused to a more or less wide, commonly

triangular plate of varied shape. Ventral ensiform setae, dorsal ensiform setae, and nematiform setae not distinguished, but a varied number of apical or preapical setae present that do not originate in a pit. Lateral plate very large, with varied number of elongate apical setae on median apical angle. Larviparous.

7.3.2. Key to the species-groups of the genus *Adelotopus* Hope

Because the number of species is now very large and the morphological diversity is high, though erection of new genera or even subgenera is not advisable at the present stage of knowledge, I decided to arrange the species into species-groups that confidently are concerned monophyletic units. For heuristic purposes, the criteria for recognizing of these groups have been strict. As a result, several groups consist of single species only that do not fit properly into other though very closely related species-groups. For the benefit of the reader and for use as prerequisite of the later discussion of phylogenetic relationships species-groups are keyed out in a special key.

1. Labrum quadrisetose .... 2.
– Labrum bisetose .... 10.

2. Scutellar pore and seta present .... 3.
– Scutellar pore and seta absent .... 5.

3. Surface covered with elongate, erect hairs .... *analis*-group
– Surface without elongate, erect hairs .... 4.

4. Lateral margins of elytra with elongate setae .... *celeripes*-group
– Lateral margins of elytra without elongate setae .... *gyrinoides*-group (part)

5. Rather wide, depressed species with rather explanate lateral margin of pronotum. Elytra unicolourous, or with reddish apex, or with reddish transverse band. Glossa c. 16-setose. Abdominal sterna with 1 pair of ambulatory setae. Surface not distinctly pilose. Aedeagus without striking asymmetric flange or spinose band at apex .... *gyrinoides*-group (part)
– Less wide and depressed species with narrow lateral margin of pronotum. When elytra unicolourous, glossa only 8-10-setose **and** surface shortly though distinctly pilose **and** aedeagus with striking asymmetric flange at apex. When elytra with reddish apex, either body very narrow and elongate, cylindrical, or aedeagus with conspicuous spinose band at apex of internal sac. When elytra with reddish transverse band, body rather narrow and convex **and** abdominal sterna with 2 pairs of ambulatory setae .... 6.

6. Colour unicolourous. Surface distinctly, though shortly pilose .... *paroensis*-group
– Elytra either with reddish apex, or with reddish transverse band or sutural spot .... 7.

7. Elytra with reddish apex .... 8.
– Elytra with reddish transverse band or sutural spot .... 9..

8. Body very narrow and elongate, cylindrical. Aedeagus without oblique, spinose band at apex of internal sac .... *nemosomoides*-group
– Body less narrow and elongate and dorsally somewhat depressed. Aedeagus with oblique, spinose band at apex of internal sac .... *punctulifer*-group

9. Elytra with reddish transverse band. Body less narrow and elongate, more convex. Glossa c. 16-setose .... *fasciatus*-group
– Elytra with reddish sutural spot. Body narrower and longer, dorsally somewhat depressed. Glossa c. 6-setose .... *maculipennis*-group

10. Surface covered with conspicuous elongate, erect hairs .... *villosus*-group
– Surface not covered with conspicuous elongate, erect hairs, at most very shortly pilose .... 11.

11. Forebody black, elytra completely red .... *atrorufus*-group
– Colour different, when bicolorous, elytra at least partly black .... 12.

12. Basal ⅗ of abdomen and of elytra except for scutellum red, apical ⅖ contrastingly black .... *nigricauda*-group
– Colour different, when elytra basally red, then at least part of base black .... 13.

13. Base of pronotum and basal third of elytra with transverse sulci .... *marginicollis*-group
– Base of pronotum and elytra without transverse sulci .... 14.

14. Lateral margin of pronotum distinctly explanate, apical angles elongate, sharply protruding, basal angles rectangular or obtuse, in a single species shortly rounded, in latter case colour dull black from distinct microreticulation **and** short and wide species .... 15.
– Lateral margin of pronotum not distinctly explanate, but sometimes rather broadly channeled, apical angles less sharp und protruding, basal angles varied, either glossy black, or yellowish-reddish, or patterned, or less short and wide species .... 17.

15. Basal border of elytra complete. Abdominal sterna with at least 1 pair of ambulatory setae .... *dytiscides*-group
– Basal border of elytra abbreviated. Abdominal sterna without ambulatory setae .... 16.

16. Series of umbilical pores of elytra with postmedian pore. Basal angle of pronotum shortly rounded off .... *katherinei*-group
– Series of umbilical pores of elytra without postmedian pore. Basal angle of pronotum angulate or obtuse .... *brevipennis*-group

17. Lateral margin of elytra with a row of elongate setae .... *laevis*-group
– Lateral margin of elytra without a row of elongate setae .... 18.

18. Basal border of elytra almost complete or little abbreviated .... 19.
– Basal border of elytra abbreviated, attaining at most two thirds of base, usually less .... 21.

19. Basal border of elytra almost complete, reaching very close to suture. Lateral margin of pronotum narrow. Abdominal sterna with 1 pair of ambulatory setae. Sternum VI without fringe of longer setae .... *politus*-group
– Basal border of elytra more abbreviated, at most attaining median ⅘ of base. Either wide, depressed species with rather wide lateral margin of pronotum, with 1 pair of abdominal ambulatory setae, but with sternum VI with fringe of longer setae, **or** narrow, almost cylindrical species with very narrow lateral margin of pronotum, with several pairs of abdominal ambulatory setae, but without fringe of longer setae on sternum VI .... 20.

20. Wide, depressed species with rather wide lateral margin of pronotum. Abdominal sterna with 1 pair of ambulatory setae. Sternum VI with fringe of longer setae at apex .... *exactor*-group
– Narrow, almost cylindrical species with very narrow lateral margin of pronotum. Abdominal sterna with several pairs of ambulatory setae. Sternum VI without fringe of longer setae at apex .... *tasmani*-group

21. Series of elytral umbilical pores consisting of 10-14 pores along the whole margin. Abdomen with 2-3 pairs of ambulatory setae .... *similis*-group
– Series of elytral umbilical pores consisting of 2-8 subhumeral pores and sometimes a single postmedian pore only. In latter case abdomen with 1 pair of ambulatory setae only .... 22.

22. Body form narrow, elongate, almost cylindrical .... 23.
– Body form wider, less elongate, not cylindrical .... 26.

23. Completely dull black. Elytron with 4 subhumeral umbilical pores **and** abdominal sterna with 2-3 pairs of ambulatory setae .... *unicolor*-group

– Elytra with reddish apex, or mostly reddish, or with reddish apical spot. Either abdominal sterna with 1 pair of ambulatory setae only, or with many setae, in latter case elytron with 6 subhumeral umbilical pores .... 24.

24. Each elytron with 2 subhumeral pores only. Elytra either with indistinct reddish apex or mostly red apart from narrow black base .... *linearis*-group

– Each elytron with 6 subhumeral pores. Elytra either with distinct reddish apex or with reddish apical spot .... 25.

25. Elytra with reddish apex. Abdominal sterna with many pairs of ambulatory setae. Surface not markedly glossy .... *tasmani*-group

– Elytra with reddish apical spot that is in middle prolonged. Abdominal steran with 1 pair of ambulatory setae only. Surface markedly glossy .... *seriepunctatus*-group

26. Colour reddish to piceous. Each elytron with 6 subhumeral marginal pores only. Abdominal sterna with 1 pair of ambulatory setae only. Internal sac at apex with oblique fold .... *rubiginosus*-group

– Colour black, without or with reddish apex. When dark piceous, either elytra with a postmedian marginal pore, or abdomen with 2 pairs of ambulatory setae **and** internal sac at apex with an oblique, conspicuously spinose band .... 27.

27. Surface not or very superficially microreticulate. Abdomen with 1 pair of ambulatory setae. Labrum fairly large, less overlapped by the clypeus. Apex of aedeagus regularly rounded. Internal sac at apex with an oblique fold .... *multipunctatus*-group

– Surface distinctly microreticulate. Abdomen without ambulatory setae. Labrum very narrow, deeply overlapped by the clypeus. Apex of aedeagus acute, side near apex sinuate. Internal sac at apex without an oblique fold .... *obsoletus*-group

7.3.3. Key to the species of the genus *Adelotopus* Hope

Because of the extreme morphological similarity within certain species-groups, some species, especially females, may be very difficult to identify. Therefore it is advisable always to compare the figures, and in many cases also to conduct very exact measurements to gain proportion ratios that have been amply used in the key. For tracking the species in the following descriptive text, the reader should use the checklist at the end of the paper.

1. Upper surface with conspicuously elongate, hirsute, erect pilosity .... 2.

– Upper surface without conspicuously elongate, erect pilosity, at most with very short pilosity 3.

2. Elytra unicolourous. n. Qld .... *villosus*, spec. nov.

– Elytra with wide, reddish apex. ce. Qld .... *analis* Macleay

3. Elytra completely reddish, fore body contrastingly black. Rather large, wide species. sw. NSW *atrorufus*, spec. nov.

– Colouration different, when fore body black, elytra not completely reddish, though at least with narrow, black basal band, or with wide, black apex .... 4.

4. Elytra maculate, or fasciate, or with **distinct** light apex, though in some species only a small dark basal band left, or basal half red and apical half black (doubtful species under both couplets) 5.

Elytra unicolourous black, or piceous, or reddish, or light yellow .... 56.

5. Basal half to two thirds of elytra including base red, apical part contrastingly black .... 6.

Colouration different, at least base narrowly black (doubtful species under both couplets) .... 8.

6. Apex of elytra distinctly red. Surface densely and coarsely though not rasp-like punctate, not microreticulate. ne. NSW .... *basirufus*, spec. nov.

– Apex of elytra black. Surface either rather sparsely though rasp-like punctate and with distinct microreticulation, or almost impunctate and without microreticulation .... 7.

7. Body form large, wide, depressed, with wide pronotum and explanate, reddish lateral margins (Figs 33, 122). Elytra with distinct, rasp-like puncturation and dense microreticulation, dull. Whole surface extremely shortly, but very densely pilose. n. NT .... *rufozonatus*, spec. nov.

– Body form rather small, narrow, elongate, with rather narrow pronotum bearing rather narrow, not explanate, black lateral margins (Figs 48, 163). Elytra almost devoid of puncturation and microreticulation, glossy. Whole surface impilose. Northern Cape York Peninsula, n. Qld .... *nigricauda*, spec. nov.

8. Elytra with light median sutural spot of varying size .... 9.

– Elytra with light discal spot, or transverse fascia, or with light apex .... 10.

9. Pronotum reddish, elytral spot small, trapezoidal, in centre of elytra (Figs 68, 414). e. Qld .... *maculipennis* Macleay

– Pronotum black, elytral spot very large, wedge-shaped, occupies most of elytra (Fig. 415). nw. Vic, sw. NSW, s. half of WA .... *cuneatus*, spec. nov.

10. Elytra with discal spot or transverse fascia in basal half .... 11.

– Elytra without discal spots or fascia, but with light apex .... 20.

11. Each elytron with light discal spot in basal half that not touch at suture or combine to a common fascia. Whole surface with remarkably coarse and dense puncturation .... 12.

– Elytra with light fascia in basal half that is in some species rather hourglass-shaped. Surface with less coarse and dense puncturation. .... 13.

12. Wide species with wide, laterally markedly explanate pronotum. Surface between punctures without distinct microreticulation. ne. NSW, e. Qld, ce. PNG .... *rufoguttatus* Blackburn

– Narrow, elongate species with narrow, laterally barely explanate pronotum. Surface between punctures with distinct microreticulation. Tas, Vic, ACT, NSW, e. Qld .... *macilentus*, spec. nov.

13. Surface of pronotum and elytra densely and more or less coarsely punctate (at 40×) .... 14.

– Surface of pronotum and elytra almost impunctate or extremely finely punctate (at 40×)........ 16.

14. Smaller, narrower species, length <3.9 mm, with narrower, pronotum and longer elytra, ratio w/l of pronotum <1.65, ratio width pronotum/head <1.58, ratio l/w of elytra >1.46. Pronotum more convex, laterally barely explanate. Puncturation far less coarse. Vic, NSW, se. Qld .... *zonatus* Castelnau

– Larger, wider species, length >4.0 mm, with wider pronotum and elytra, ratio w/l of pronotum >1.69, ratio width pronotum/head >1.66, ratio l/w of elytra <1.43. Pronotum more depressed, laterally fairly explanate. Puncturation much coarser .... 15.

15. Slightly smaller species, length <4.4. mm. Base of elytra more extensively black. Puncturation of surface remarkably coarse. NSW, se. Qld .... *affinis* Castelnau

– Slightly larger species, length >4.5 mm. Base of elytra very narrowly black or even completely red. Puncturation of surface distinctly less coarse. ne. NSW .... *basirufus*, spec. nov.

16. Basal border line of elytra short, barely attaining middle of base. Narrow, elongate species with highly convex, narrow pronotum, ratio w/l of pronotum <1.50, ratio l/w of elytra >1.64. Pronotum with fine though at 40× still perceptible puncturation. e. Vic, s. NSW, ACT ... *fasciatus* Castelnau

– Basal border line of elytra elongate, almost attaining scutellum. Wider, less elongate species with wider, more depressed pronotum, ratio w/l of pronotum >1.60, ratio l/w of elytra <1.63. Puncturation of pronotum at 40× not or barely perceptible .... 17.

17. Smaller, length 4.15 mm. Pronotum narrower at base, ratio base/apex 1.38. Elytra shorter in relation to pronotum, ratio length of elytra/length of pronotum 2.51. Right paramere remarkably narrow and parallel (Fig. 146i). Australia, exact distribution unknown .... *clepsydra*, spec. nov.

– Larger, length >4.6 mm. Pronotum wider at base, ratio base/apex >1.43. Elytra longer in relation to pronotum, ratio length of elytra/length of pronotum >2.56. Right paramere shorter and more triangular (Figs 143i, 144i, 145i) .... 18.

18. Body form wider, with wider, more triangular pronotum bearing more explanate lateral margins, ratio w/l of pronotum >1.82, ratio base/apex of pronotum >1.62, with wider elytra, ratio l/w of elytra <1.43. Elytra distinctly microreticulate, also pronotum distinctly microreticulate though very indistinctly punctate. ne. Qld .... *languidus*, spec. nov.

– Body form narrower, with narrower, less triangular pronotum and less explanate lateral margins, ratio w/l of pronotum <1.82, ratio base/apex of pronotum <1.61, with narrower elytra, ratio l/w of elytra >1.44. Elytra not microreticulate, pronotum very indistinctly microreticulate though under 64× fairly distinctly punctate .... 19.

19. Body wider with wider pronotum and shorter elytra, ratio w/l of pronotum >1.74, ratio l/w of elytra <1.50. Elytral spot almost always distinctly hourglass-shaped (Fig. 330). Parameres shorter, especially right paramere perceptibly shorter than left (Figs 143i). ne. Qld south to about Mackay (intermediate population further south) .... *bimaculatus bimaculatus* Macleay

– Body narrower with narrower pronotum and longer elytra, ratio w/l of pronotum <1.70, ratio l/w of elytra >1.55. Elytral spot posteriorly usually straight or even convex (Fig. 331). Parameres longer, right paramere barely shorter than left (Fig. 144i). se. Qld north to about Gladstone (intermediate population further north) .... *bimaculatus angustior*, subspec. nov.

20. Only base of elytra narrowly black, apical ⅘ red. Body narrow, very elongate, cylindrical. e. Qld, n. NT, n. WA .... *linearis* Macleay

– Base of elytra more extensively black, usually only apex more or less widely red .... 21.

21. More than apical half of elytra reddish **and** reddish area anteriorly remarkably convex and prolonged along suture (Figs 50, 356, 357) **and** head and pronotum densely and coarsely punctate. Apex of aedeagus remarkably acute, dentiform (Figs 168g, 169g). Lateral plate of ♀ stylomeres very short (Figs 168l, 169l) .... 22.

– Either only apex of elytra reddish **or** reddish area anteriorly straight or concave **or** head and pronotum not coarsely punctate. Apex of aedeagus never dentiform. Lateral plate of ♀ stylomeres usually less short .... 23.

22. Generally larger, length 4.9-6.0 mm. Reddish elytral spot larger, usually widely touching lateral border of elytra (Fig. 356). Pronotum laterally straight and remarkably conical, at base less incurved. Surface less deep black. SA, Vic, sw. NSW; ?Tas .... *puncticollis puncticollis* Notman

– Generally smaller, length 4.8-4.9 mm. Reddish elytral spot smaller, not touching lateral border of elytra (Fig. 357). Pronotum laterally slightly convex, not markedly conical, at base rather incurved. Surface remarkably deep black. sw. WA .... *puncticollis angustemaculatus*, subspec. nov.

23. Surface of elytra highly glossy, without microreticulation **and** striae well marked by a row of punctures **and** intervals at most with a single row of punctures in middle **and** pronotum at least laterally very coarsely punctate .... 24.

– Either surface of elytra microreticulate **or** striae not well marked **or** intervals more extensively punctate **or** pronotum at most finely punctate .... 28.

24. Smaller species, length <5 mm. Puncturation of apical part of pronotum in middle almost as coarse as laterally. Pronotum and elytra longer and narrower, pronotum laterally rather parallel, ratios w/l of pronotum <1.20, base/apex of pronotum <1.32, width pronotum/head <1.35, l/w of elytra c. 1.90. ACT, s. NSW .... *montisatri*, spec. nov.

– Usually larger species, length generally >5 mm. Puncturation of apical part of pronotum in middle distinctly finer than laterally. Pronotum and elytra wider, pronotum more widened towards base, commonly rather conical, ratios w/l of pronotum >1.33, base/apex of pronotum >1.39, width pronotum/head >1.45, l/w of elytra <1.70 .... 25.

25. Elytral intervals impunctate and impilose, though striae punctate. Lateral margin of pronotum fairly wide. Stylomere narrow and sides parallel, lateral plate rather short (Fig. 166l). ne. Qld ... . *calvus*, spec. nov.

– Elytral intervals more or less finely punctate and pilose, striae punctate or not. Lateral margin of pronotum narrower. Stylomere wider, sides either convex (Fig. 164l), or rather parallel, but when parallel lateral plate remarkably elongate and not parallel (Fig. 165l) .... 26.

26. Body slightly longer, narrower, with longer elytra, ratio l/w of elytra 1.69. Pronotum very convex with narrow lateral margins. Stylomere rather narrow with parallel sides, at apex straight, lateral plate very elongate (Fig. 165l). se. Qld .... *convexus*, spec. nov.

– Body slightly shorter, wider, with shorter elytra, ratio l/w of elytra <1.65. Pronotum less convex with slightly wider lateral margins. Stylomere wide, at apex rounded off, lateral plate rather short (Fig. 164l) .... 27.

27. Slightly larger, length 6.0-6.7 mm. Elytral striae almost impunctate. Pronotum with sparser puncturation in middle of apical half. Vic, s. NSW .... *seriepunctatus seriepunctatus* Notman

– Slightly smaller, length 4.95-6.1 mm. Elytral striae punctate. Pronotum with denser puncturation in middle of apical half. ce. Qld .... *seriepunctatus striatus*, subspec. nov.

28. Body very narrow and elongate, more or less cylindrical (Figs 47, 57, 67, 349, 385, 411, 412, 413) .... 29.

– Body wider and shorter, not cylindrical .... 33.

29. Surface of pronotum and elytra densely microreticulate, not perceptibly punctate (at 40×), apart from elytral striae that are sometimes finely punctate; surface remarkably dull .... 30.

– Surface of pronotum and elytra not densely microreticulate, densely though very finely punctate (at 40×); surface rather glossy .... 31.

30. Body slightly larger (length 5.8 mm), wider and shorter, with wider pronotum and not conspicuously cylindrical body, ratios w/l of pronotum 1.30, width pronotum/head 1.36, l/w of elytra 1.83. Reddish apical part of elytra rather distinctly delimited, barely prolonged along suture (Fig. 349). Basal angle of pronotum rounded off, lateral margin narrow, not channeled. Tas .... *tasmani* Blackburn

– Body slightly smaller (length <5.2 mm), narrower and longer, with narrower pronotum and conspicuously cylindrical body, ratios w/l of pronotum <1.17, width pronotum/head <1.26, l/w of elytra >2.04. Reddish apical part of elytra ill delimited, prolonged along suture (Fig. 385). Basal angle of pronotum rectangular, lateral margin rather wide, distinctly channeled. NSW, n. NT (one of these records may be wrong!) .... *bacillus*, spec. nov.

31. Body narrower, more cylindrical, with longer and narrower pronotum, ratios w/l of pronotum <1.10, base/apex of pronotum <1.18. Puncturation finer, just visible at 40×, microreticulation more developed. Apex of aedeagus conspicuously hooked (Fig. 222g). e. Vic, s. NSW .... *longiformis*, spec. nov.

– Body slightly wider, less cylindrical, with shorter and wider pronotum, ratios w/l of pronotum >1.23, base/apex of pronotum >1.24. Puncturation coarser, well visible at 40×, microreticulation very faint. Apex of aedeagus not hooked (Fig. 221g) or unknown .... 32.

32. Body slightly shorter, with wider pronotum and shorter elytra, ratios w/l of pronotum >1.25, l/w of elytra <1.91. Only apical third of elytra reddish (Fig. 411). Pronotum slightly less conical. e. SA, Vic, ACT, s. NSW .... *nemosomoides* Westwood

– Body slightly longer, with narrower pronotum and longer elytra, ratios w/l of pronotum 1.23, l/w of elytra 1.95. Almost apical half of elytra reddish (Fig. 413). Pronotum slightly more conical. Distribution unknown .... *conicollis*, spec. nov.

33. Elytron at base with scutellar pore and seta .... 34.

– Elytron at base without scutellar pore and seta .... 36.

34. Generally smaller, length 4.3-5.2 mm. Reddish apex of elytra usually not well delimited or even absent. Pronotum narrower, with wider and more chanelled lateral margins and less rounded basal angles. Puncturation on elytra dense, at least traces of microreticulation present on elytra. Tas, e. Vic, ACT, s. NSW; ?s. Qld .... *dubius dubius*, subspec. nov.

- Generally larger, length 4.9-6.0 mm. Reddish apex of elytra well delimited. Pronotum wider, with narrower and less chanelled lateral margins and more rounded basal angles. Puncturation on elytra less dense, microreticulation absent on elytra .... 35.

35. Pronotum generally slightly narrower, ratio w/l of pronotum 1.59-1.75. Puncturation on elytra denser, surface less glossy. sw. Tas .... *dubius hobartensis*, subspec. nov.

– Pronotum generally slightly wider, ratio w/l of pronotum 1.68-1.86. Puncturation on elytra sparser, surface glossier. e. Vic .... *dubius glaber*, subspec. nov.

36. Basal border line of elytra reaching to or close to scutellum (Fig. 292, 323-328) .... 37.

– Basal border line of elytra abbreviated, usually reaching only halfways to scutellum, rarely slightly longer (doubtful species under both couplets) .... 43.

37. Basal border line of elytra clearly attaining suture behind scutellum. Large and wide, glossy species with wide pronotum with distinctly concave base, and with apically markedly narrowed elytra. Elytral striae near apex with rasp-like punctures. ne. Qld, PNG .... *apicalis* Macleay

– Basal border line of elytra not attaining suture behind scutellum. Narrower species with narrower pronotum with straight base, and with rather parallel elytra. Elytral striae near apex without rasp-like punctures .... 38.

38. Elytra without microreticulation, glossy, striae at least in apical half well perceptible and distinctly punctate. se. Qld .... *nitens*, spec. nov.

– Elytra with very fine, though distinct microreticulation (at 40×), rather dull, striae almost not perceptible and not or barely punctate .... 39.

39. Body short and wide, with wide pronotum, ratios w/l of pronotum 1.84, l/w of elytra <1.4. Aedeagus short and wide, rather symmetric (Fig. 136g). Parameres, especially right one, conspicuously triagonal with angulate apex (Figs 136i,k). c. Qld .... *rufocaudatus*, spec. nov.

– Body longer and less wide, with narrower pronotum, ratios w/l of pronotum <1.75, l/w of elytra >1.55. Aedeagus, when known, longer and narrower, slightly asymmetric (Figs 137g, 138g, 140g). Parameres less triagonal with less angulate apex (Figs 137i,k, 138i,k, 140i,k) .... 40.

40. Reddish apical part of elytra anteriorly straight. Stylomere narrow, apical part parallel (Fig. 327). ne. Qld .... *sparsepunctatus*, spec. nov.

– Reddish apical part of elytra anteriorly concave. Stylomere wide, apical part triangular or convex (Figs 324, 325, 328). Distribution different .... 41.

41. Smaller, length 5.5 mm. Elytra shorter, ratio l/w 1.55. Pronotum wider in relation to head, ratio 1.73. Stylomere wide, at apex obliquely convex (Fig. 141l). Aedeagus unknown. Distribution unknown .... *semilunatus*, spec. nov.

– Larger, length >6.0 mm. Elytra longer, ratio l/w >1.60. Stylomere see figs 137l, 138l .... 42.

42. Larger, length 6.4-8.1 mm. Pronotum slightly wider with wider base, ratios w/l of pronotum 1.62-1.68, base/apex 1.55-1.62. Aedeagus slightly shorter with shorter parameres (Figs 137g-k). Stylomere triangular (Fig. 137l). Tas, e. Vic, ACT, e. NSW, se. Qld .... *haemorrhoidalis* Erichson

– Smaller, length 6.0-6.3 mm. Pronotum slightly narrower with narrower base, ratios w/l of pronotum 1.56-1.64, base/apex 1.51-1.56. Aedeagus slightly longer with longer parameres (Figs 138g-k). Stylomere convex at apex, not triangular (Fig. 138l). Tas, e. Vic, se. NSW .... *minor*, spec. nov.

43. Labrum 4-setose .... 44.

- Labrum 2-setose .... 46.

44. Pronotum and elytra wide, dorsally markedly depressed, ratio w/l of pronotum >1.90. Aedeagus without oblique spinose band at apex of internal sac (Figs 205g,h, 209g,h) .... 45.

– Pronotum and elytra narrower, dorsally less depressed, ratio w/l of pronotum <1.65. Aedeagus with oblique spinose band at apex of internal sac (Fig. 217g,h) e. NSW, se. Qld .... *punctulifer*, spec. nov.

45. Pronotum usually wider, ratio w/l 1.96-2.08, elytra shorter, ratio l/w 1.37-1.45. Elytra with 5-7 marginal pores. Surface of elytra less punctate, glossier. ACT, se. NSW .... *lunatus*, spec. nov.

– Pronotum usually narrower, ratio w/l 1.92-1.98, elytra longer, ratio l/w 1.47-1.51. Elytra with 4, rarely unilaterally 5 marginal pores. Surface of elytra more densely punctate, less glossy. e. SA, Vic, ACT, se. NSW .... *lawrencei*, spec. nov.

46. Large species, length >6.9 mm .... 47.

– Smaller species, length <6.4 mm .... 48.

47. Body rather wide, head with markedly produced antero-lateral angles. Ratios w/l of pronotum 1.72, base/apex of pronotum 1.61, l/w of elytra 1.52. Pronotum with traces of microreticulation only. Aedeagus unknown. Solomon Islands .... *penelopeae*, spec. nov.

– Body rather narrow, head with barely produced antero-lateral angles. Ratios w/l of pronotum <1.6, base/apex of pronotum <1.5, l/w of elytra >1.65. Pronotum with distinct microreticulation. Aedeagus very elongate, narrowed at apex (Fig. 161g). e. Vic, ACT, NSW; ?SA .... *similis*, spec. nov.

48. Smaller (length <5 mm) **and** ratio w/l of pronotum <1.7 .... 49.

– Larger, length >5.1 mm, when length <5.8 mm then pronotum wide, ratio w/l >1.76 .... 52.

49. Pronotum comparatively wide, ratio w/l >1.68, elytra short, ratio l/w c. 1.5. Anterior margin of red apex of elytra slightly concave .... 50.

– Pronotum narrower, ratio w/l <1.52, elytra longer, ratio l/w >1.57. Anterior margin of red apex of elytra slightly convex. At 40× traces of microreticulation on elytra barely visible .... 51.

50. At 40× microreticulation on pronotum and elytra well visible. Pronotum markedly convex, microreticulation regular. Aedeagus distinctly narrowed to apex, apex less widely rounded (Fig. 157g). ne. Qld .... *gibbosus*, spec. nov.

– At 40× microreticulation on pronotum and elytra barely visible. Pronotum far less convex, microreticulation superficial. Aedeagus little narrowed to apex, apex very widely rounded (Fig. 155g). Northern tip of Cape York Peninsula, ne. Qld .... *yorkensis*, spec. nov.

51. Pronotum and elytra dorsally very convex. Elytra longer, ratio l/w 1.64. ne Qld .... *convexicollis*, spec. nov.

– Pronotum and elytra dorsally perceptibly depressed. Elytra shorter, ratio l/w 1.57. ne. Qld .... *kurandae*, spec. nov.

52. Smaller species, length <5.9 mm, with wider pronotum, ratio w/l 1.76-1.90. Aedeagus, especially apex, shorter, apical fold of internal sac less markedly denticulate (Figs 153g,h, 154g,h), parameres less triangular (Figs 153i,k, 154i,k). ne. Qld, PNG .... 53.

– Larger species, length >5.9 mm, with narrower pronotum, ratio w/l 1.66-1.77. Aedeagus, when known, longer, especially at apex, apical fold of internal sac markedly denticulate (Figs 150g,h), parameres remarkably triangular (Figs 150i,k) .... 54.

53. Aedeagus c. 1.3 mm long. Traces of microreticulation on elytra visible, puncturation more distinct, well visible (at 40×). Series of marginal pores of elytra without postmedian pore. PNG ....*debitor* Darlington

– Aedeagus c. 1 mm long (at same size of beetle!). Puncturation on elytra barely visible (at 40×), microreticulation absent. Series of marginal pores of elytra with postmedian pore. ne. Qld .... *nitidior*, spec. nov.

54. Elytra parallel for basal two thirds, surface posteriorly more depressed. Anterior margin of red apex of elytra either slightly convex or sinuate (Figs 338, 339). Aedeagus unknown. Australia ... . 55.

– Elytra distinctly narrowing from behind shoulders, surface posteriorly rather convex. Anterior margin of red apex of elytra slightly concave (Fig. 337). Aedeagus see fig. 150g-k. Malaysia, Java .... *jacobsoni* Ritsema

55. Microreticulation on pronotum and elytra fine though well visible (at 40×), surface moderately glossy. Pronotum narrower, ratio w/l c. 1.65, basal angles obtuse. Anterior margin of red apex of elytra slightly convex, regular. Lateral plate of stylomere elongate (Fig. 151l). ce. Qld .... *geminus*, spec. nov.

– Microreticulation on pronotum and elytra highly superficial, barely visible (at 40×), surface glossy. Pronotum wider, ratio w/l c. 1.7, basal angles rounded. Anterior margin of red apex of elytra sinuate, incised at suture. Lateral plate of stylomere shorter (Fig. 152l). Northern tip of Cape York Peninsula, ne. Qld .... *laticaudatus*, spec. nov.

56. Body narrow and very elongate, cylindrical. s. WA .... *unicolor*, spec. nov.

– Body wider and shorter, not cylindrical .... 57.

57. Elytra at base with scutellar pore and seta .... 58.

– Elytra without scutellar pore and seta .... 60.

58. Body very wide and short, elytra almost as wide as long, ratios w/l of pronotum >2.3, l/w of elytra <1.2. Basal angles of pronotum widely rounded, lateral margins of elytra with elongate setae (Fig. 386). s. WA .... *celeripes* Lea

– Body far less wide and more elongate, elytra far longer than wide, ratios w/l of pronotum <1.75, l/w of elytra >1.45. Basal angles of pronotum more narrowly rounded, lateral margins of elytra without elongate setae. Distribution different .... 59.

59. Pronotum generally wider, elytra shorter, ratios w/l of pronotum 1.63-1.74, l/w of elytra 1.46-1.52. Apex of elytra usually more or less distinctly reddish. Aedeagus near apex convex, apex slightly wider (Fig. 203g). Tas, e. Vic, ACT, s. NSW; ?s. Qld .... *dubius dubius*, subspec. nov.

– Pronotum generally narrower, elytra longer, ratios w/l of pronotum 1.56-1.65, l/w of elytra 1.50-1.55. Apex of elytra never reddish. Aedeagus near apex slightly impressed, apex slightly narrower (Fig. 202g). ACT. s. NSW .... *vicinus* Castelnau

60. Basal border line of elytra reaching to or close to scutellum or suture .... 61.

– Basal border line of elytra markedly abbreviated, never occupying more than two thirds of base .... 75.

61. Lateral margin of elytra setose also behind shoulders (Fig. 295). Aedeagus with asymmetrically impressed apex (Fig. 106g), ♂ sternum VII very elongate and with shallow apical excision (Fig. 106e). s. WA .... *howdenorum*, spec. nov.

– Lateral margin of elytra asetose behind shoulders. Aedeagus not with asymmetrically impressed apex (Figs 100g-105g, 128g-132g, 134g), ♂ sternum VII less elongate and usually with rather deep apical excision (Figs 100e-105e, 128e-132e, 134e) .... 62.

62. Lateral margins of pronotum explanate **and** basal angles angulate, almost rectangular (Figs 289-294). Wide species with wide pronotum **and** aedeagus never with oblique fold in apical part of internal sac (Figs 100g,h-105g,h)) .... 63.

– Lateral margins of pronotum not explanate though sometimes rather broadly channeled **and** basal angles not rectangular and angulate. In doubtful cases either less wide species with narrower pronotum **or** aedeagus with oblique fold in apical part of internal sac **or** basal border of elytra abbreviated, attaining only median ⅘ of base .... 68.

63. Surface markedly dull from dense microreticulation (Fig. 446), elytra almost impunctate, not even striae distinctly punctate. Aedeagus narrow and elongate, symmetric, lower surface evenly curved (Fig. 105g), genital ring markedly asymmetric (Fig. 105f). sw. WA .... *sericeus*, spec. nov.

– Surface dull or glossy, but elytra always punctate, at least striae posteriorly distinctly punctate. Aedeagus, when known, less narrow and elongate **or** slightly asymmetric **or** lower surface not evenly curved (Figs 100g-103g), genital ring rather symmetric (Figs 100f-103f) .... 64.

64. Generally smaller, length <6.5 mm, with narrower pronotum and longer elytra, ratios w/l of pronotum <1.8, base/apex of pronotum <1.7, l/w of elytra >1.40. ♂ unknown. ne. Qld .... *zborowskii*, spec. nov.

– Either larger, length >7.5 mm **or** with wider pronotum and shorter elytra, ratios w/l of pronotum >1.9, base/apex of pronotum >1.8, l/w of elytra <1.35 .... 65.

65. Surface fairly glossy, microreticulation fine, not silky. Puncturation at apex of elytra not rasp-like (Figs 443, 444). Apex of abdomen conspicuously red. Aedeagus short, slightly asymmetric, lower surface distinctly convex (Fig. 103g). ne Qld, PNG .... *apicalis* Macleay

– Surface more or less dull, microreticulation stronger, rather silky. Puncturation at apex of elytra rasp-like (Figs 438-442). Apex of abdomen not conspicuously red. Aedeagus longer, less asymmetric, lower surface barely convex (Figs 100g-102g) .... 66.

66. Base of pronotum straight (Fig. 289). Punctures at apex of elytra rather fine, not horseshoe-shaped, though rasp-like. Aedeagus narrow (Fig. 100g). e. SA, Vic, ACT, NSW. s. Qld. sw. WA; ?Tas .... *dytiscides* Newman

– Base of pronotum distinctly concave (Figs 290, 291). Punctures at apex of elytra remarkably coarse, somewhat horseshoe-shaped (Figs 440, 442). Aedeagus wider (Figs 101g, 102g) .... 67.

67. Body wider, with shorter elytra, ratios w/l of pronotum 1.89-2.05, l/w of elytra <1.25. Surface less silky, punctures on apical half of elytra even coarser. Lower surface of aedeagus straight, left paramere acute at apex (Figs 102g,k). ne. Qld .... *latior*, spec. nov.

– Body narrower, with longer elytra, ratios w/l of pronotum 1.78-1.86, l/w of elytra >1.35. Surface more silky, punctures on apical half of elytra slightly finer. Lower surface of aedeagus slightly convex, left paramere rounded at apex (Figs 101g,k). ne. Qld .... *ulrichi* , spec. nov.

68. Surface of elytra glossy, virtually without microreticulation (at 64x). Rather narrow, elongate species with elongate elytra, ratios w/l of pronotum <1.72, l/w of elytra >1.6. In doubtful cases larger species with length >7.5 mm, or smaller species with length <5.5 mm and then with rather coarse elytral puncturation .... 69.

– Surface of elytra not glossy, at least with traces of microreticulation (at 64x). In doubtful cases either larger and wider species, ratios w/l of pronotum >1.72, l/w of elytra <1.55, or medium-sized species, length 6.0-6.8 mm, with fine elytral puncturation .... 70.

69. Larger, length >7.5 mm, with wider pronotum, ratio w/l >1.65. Aedeagus rather elongate, with wider apex (Fig. 131g), parameres with rounded apex (Figs 131i,k). ne. NSW .... *aterrimus*, spec. nov.

– Smaller, length <5.5 mm, with narrower pronotum, ratio w/l >1.4. Aedeagus rather short, with narrower apex (Fig. 135g), parameres triangular with rather acute apex (Figs 135i,k). ce. Qld .... *caniae*, spec. nov.

70. Body narrow and elongate, ratios w/l of pronotum <1.6, l/w of elytra 1.68-1.70. Aedeagus unknown. ne. NSW .... *substriatus*, spec. nov.

– Body wider and shorter, ratios w/l of pronotum >1.7, l/w of elytra <1.53 .... 71.

71. Body wide, depressed, with distinctly reddish and rather explanate lateral margins of pronotum and elytra **and** pronotum >2× as wide as long, markedly narrowed towards apex, ratio base/apex 1.87. Antero-lateral angles of head distinctly angulate. Aedeagus narrow and elongate, rather parallel, slightly asymmetric (Fig. 128g,h). PNG .... *exactor* Darlington

– Body less wide and depressed, usually without distinctly reddish and rather explanate lateral margins of pronotum **or** pronotum <2× as wide as long, less narrowed towards apex, ratio base/ apex <1.8. Antero-lateral angles of head not angulate. Aedeagus, when known, wider and shorter, narrowed towards apex, rather asymmetric (Figs 129g,h, 132g,h) .... 72.

72. Body narrower, generally with longer elytra, ratios w/l of pronotum 1.72-1.85, base/apex <1.70, l/w of elytra 1.39-1.53. When pronotum rather wide, then elytral striae at apex not distinctly rasp-like punctate (at 40×) .... 73.

– Body wider, generally with shorter elytra, ratios w/l of pronotum >1.86, base/apex >1.76, l/w of elytra 1.38. When pronotum rather narrow, then elytral striae at apex distinctly rasp-like punctate (at 40×) .... 74.

73. Elytra generally slightly shorter, ratio l/w 1.38-1.48. Parameres longer, more triangular, with more acute apex (Figs 129i,k). e. SA, Vic, ACT, NSW, e. Qld; ?Tas .... *politus* Castelnau

– Elytra generally slightly longer, ratio l/w 1.47-1.53. Parameres shorter, less triangular, with rather convex apex (Figs 132i,k). ne. NSW, se. Qld .... *doyeni*, spec. nov.

74. Lateral margins of pronotum and elytra distinctly reddish and somewhat explanate, basal angles of pronotum rectangular. Striae near apex of elytra distinctly rasp-like punctate (at 40×). Northern tip of Cape York Peninsula, n. Qld .... *sedlaceki*, spec. nov.

– Lateral margins of pronotum and elytra not distinctly reddish and not explanate, basal angles of pronotum rounded. Striae near apex of elytra not rasp-like punctate (at 40×). ce. NSW .... *variolosus* Lea.

75. Labrum 4-setose .... 76.

– Labrum 2-setose .... 86.

76. Body rather narrow, dorsally convex, ratios w/l of pronotum <1.4, base/apex of pronotum <1.35, length elytra/pronotum <2.3. Surface rather sparse, though distinctly pilose. Aedeagus with conspicous hook-like flange near apex (Fig. 219g). e. SA, Vic, NSW, Qld; ?WA .... *paroensis* Castelnau

– Body wide, dorsally depressed, ratios w/l of pronotum >1.6, base/apex of pronotum >1.5, length elytra/pronotum >2.5. Surface impilose. Aedeagus without hook-like flange near apex .... 77.

77. Body wide, colour deep black, remarkably glossy, with explanate lateral margins and widely rounded basal angles of the wide pronotum, ratios w/l of pronotum 1.98-2.05, l/w of elytra 1.35-1.44. Puncturation of surface remarkably sparse, though punctures fairly coarse, distance between elytral punctures on the average 4-6× as large as diameter of punctures. ne. NSW, se. Qld; ?Vic .... *parumpunctatus*, spec. nov.

– Body less wide, colour less deep black, generally less glossy, with narrower pronotum, less explanate lateral margins and less widely rounded basal angles of ponotum, ratios w/l of pronotum <1.93, l/w of elytra >1.42. Puncturation of surface denser, punctures either coarse and very dense, or much finer, distance between elytral punctures on the average <4× as large as diameter of punctures .... 78.

78. Punctuation of surface remarkably coarse and dense, especially on pronotum, here distance between punctures barely larger than diameter of punctures. ne. NSW, se. Qld .... *punctatus* Castelnau

– Punctuation of surface very fine, usually less dense, especially on pronotum, distance between punctures about 3-4× as large as diameter of punctures .... 79.

79. Body rather narrow and elongate, dorsally less depressed, ratios w/l of pronotum 1.62-1.66, base/apex of pronotum 1.49-1.51, l/w of elytra >1.6. Colour piceous with distinct reddish translucent margins of pronotum and elytra. Aedeagus short (Fig. 210g,h), basal angles of ♂ sternum VII obtuse (Fig. 210e). e. Vic .... *gippslandicus*, spec. nov.

– Body generally wider and shorter, dorsally more depressed, ratios w/l of pronotum 1.65-1.92, base/apex of pronotum >1.54, l/w of elytra <1.53. Colour mostly black, rarely blackish-piceous with reddish translucent margins of pronotum and elytra, in latter species pronotum much wider and basal angles of ♂ sternum VII widely rounded .... 80.

80. Surface of pronotum and elytra piceous-black or black, but in latter specimens lateral margins of pronotum and elytra distinctly reddish translucent .... 81.

– Surface of pronotum and elytra deep black, lateral margins of pronotum and elytra not reddish translucent .... 85.

81. At least traces of microreticulation visible on pronotum and elytra (doubtful specimens under both couplets) .... 82.

– Microreticulation absent on pronotum and elytra .... 84.

82. Surface black, puncturation of elytra distinctly rasp-like (Fig. 540. Stylomere narrow and very elongate (Fig. 201l). Aedeagus unknown. sw. WA .... *mainae*, spec. nov.

– Surface usually somewhat piceous, puncturation of elytra not distinctly rasp-like (Figs 538, 539). Stylomere shorter and wider (Figs 199l, 200l) .... 83.

83. Colour more distinctly piceous. Microreticulation rather distinct. Puncturation of elytra less dense, distance between punctures c. 3× as large as diameter of punctures. Stylomere longer and narrower (Fig. 199l). c. Vic, se. NSW .... *gyrinoides orientalis*, subspec. nov.

– Colour more blackish-piceous. Microreticulation rather indistinct or almost absent. Puncturation of elytra denser, distance between punctures c. 2× as large as diameter of punctures. Stylomere shorter and wider (Fig. 200l). s. WA .... *gyrinoides gyrinoides* Hope

84. Pronotum narrower, ratio w/l 1.65-1.76. Puncturation of elytra coarser and denser, distance between punctures c. 2× as large as diameter of punctures. Apex of aedeagus rather acute (Fig. 199g), basal angles of ♂ sternum VII angulate (Fig. 199e). s. WA .... *gyrinoides gyrinoides* Hope

– Pronotum wider, ratio w/l 1.76-1.84. Puncturation of elytra finer and less dense, distance between punctures >3× as large as diameter of punctures. Apex of aedeagus rather wide and convex (Fig. 207g), basal angles of ♂ sternum VII widely rounded (Figs 207e). e. SA, w. Vic, s. NSW; se. Qld .... *murrayanus*, spec. nov.

85. Body wider and shorter, with wider pronotum and shorter elytra, ratios w/l of pronotum 1.85-1.93, base/apex of pronotum 1.60-1.65, l/w of elytra 1.43-1.46. Apex of aedeagus rather transverse (Fig. 204g). Stylomere very wide (Fig. 204l). ne. Vic, se. NSW, ACT .... *montorum*, spec. nov.

– Body narrower and longer, with narrower pronotum and longer elytra, ratios w/l of pronotum 1.75-1.86, base/apex of pronotum 1.55-1.60, l/w of elytra 1.47-1.50. Apex of aedeagus more convex (Fig. 206g). Stylomere narrower (Fig. 206l). n. Tas, e. Vic, se. NSW .... *victoriensis*, spec. nov.

86. Pronotum narrow with comparatively narrow base, rather quadrate, with widely channeled lateral margins, near base with a transverse impression. Elytra with a transverse impression in basal third .... 87.

– Pronotum either wide with rather wide base, or pronotum narrow, but in latter case lateral margins not widely channeled. Pronotum and elytra without transverse impressions .... 89.

87. Colour light reddish. Puncturation of pronotum very fine, of elytra fine, not coriaceous, microreticulation almost absent. nw. Qld .... *marginicollis*, spec. nov.

– Colour black. Puncturation of pronotum coarse, of elytra coarse, either microreticulation very distinct, or puncturation remarkably coriaceous. Distribution different .... 88.

88. Surface of elytra markedly dull from dense microreticulation, puncturation rasp-like, moderately coriaceous (Fig 465). Pronotum distinctly narrowed to base, elytra shorter, ratio l/w <1.65. Stylomere narrow and elongate (Fig. 126l). c. NT .... *coriaceus*, spec. nov.

– Surface of elytra rather glossy, microreticulation barely visible, puncturation highly coriaceous (Fig. 466). Pronotum barely narrowed to base, elytra longer, ratio l/w <1.76. Stylomere wide and short (Fig. 127l). c. WA .... *seminitidus*, spec. nov.

89. Lateral margins of pronotum explanate, apical angles acute and remarkably protruding, far surpassing centre of apex (seen from above). Usually basal angles of pronotum rectangular or obtuse, when narrowly rounded off, colour dark **and** series of marginal elytral pores with postmedian pore **and** surface dull from distinct microreticulation .... 90.

– Lateral margins of pronotum not explanate though sometimes rather widely channeled, apical angles less protruding. Usually basal angles of pronotum widely rounded off. Colour either reddish or black, in latter case surface more or less glossy from weak or absent microreticulation .... 103.

90. Colour black or very dark piceous, generally without or with indistinct reddish translucent lateral margins of pronotum and elytra **or** with very wide and distinct reddish lateral margins, but dark base and apex, and pronotum at base very wide, ratio base/apex >1.8, with lateral margins near base markedly parallel, puncturation rather dense and distinct, and microreticulation rather superficial .... 91.

– Colour piceous to flavous, piceous specimens usually with reddish translucent lateral borders and base and apex of pronotum and elytra, in that case base less wide, ratio base/apex <1.65, lateral margins near base not markedly parallel, puncturation rather sparse and fine, and microreticulation very distinct .... 96.

91. Lateral margins of pronotum and elytra widely and distinctly reddish. Base of pronotum very wide, ratio base/apex 1.82, lateral borders near base markedly parallel. Puncturation of surface distinct, rather dense, microreticulation rather superficial, hence surface comparatively glossy. Stylomere very narrow and elongate (Fig. 110l). ne. NT .... *rufomarginatus*, spec. nov.

– Lateral margins of pronotum and elytra at most narrowly and indistinctly reddish translucent. Base of pronotum usually less wide, ratio base/apex <1.8, lateral borders near base not markedly parallel. Puncturation of surface fine, far less distinct, microreticulation distinct, hence surface dull. Stylomere wider and shorter .... 92.

92. Body elongate, rather narrow, with narrow pronotum and elongate elytra, ratios w/l of pronotum 1.62, l/w of elytra 1.59. Elytra with fairly sparse though coarse, distinct, rasp-like puncturation. Aedeagus rather symmetric with wide, evenly rounded apex (Fig. 121g). Tip of Cape York Peninsula, n. Qld .... *bamagae*, spec. nov.

– Body shorter, wider, ratios w/l of pronotum >1.71, l/w of elytra <1.47. Elytra with far less distinct, not rasp-like puncturation. Aedeagus usually less symmetric (Figs 107g, 108g, 111g, 123g). Distribution different .... 93.

93. Basal angles of pronotum distinctly rounded off (Figs 31, 296). Basal border line of pronotum covering two thirds of base. Group of marginal pores of elytra consisting of 6 subhumeral pores and one postmedian pore. Aedeagus see figs 107g,h. n. NT .... *katherinei*, spec. nov.

– Basal angles of pronotum rectangular or at most obtuse (Figs 32, 297, 300, 310). Basal border line of pronotum covering only half of base. Group of marginal pores of elytra lacking at least the postmedian pore. Aedeagus see figs 108g,h, 111g,h, 123g,h .... 94.

94. Puncturation of surface almost invisible (at 40×). Marginal pores of elytra consting of only 3 subhumeral pores. Aedeagus very wide, highly asymmetric, with acute apex (Fig. 108g). n. NT, n. WA .... *brevipennis* Macleay

– Puncturation of surface well visible (at 40×). Marginal pores of elytra consting of 6 subhumeral pores. Aedeagus less wide, less asymmetric, with rounded apex (Figs 111g, 123g) .... 95.

95. Generally larger, length 6.1-7.8 mm, body more depressed, with wider pronotum and shorter elytra, ratios w/l of pronotum >1.80, base/apex of pronotum >1.72, l/w of elytra <1.4. Basal angles of pronotum angulate, surface densely and distinctly punctate (at 40×) and rather coriaceous. Aedeagus see figs 111g,h. Stylomere rather narrow, apex medially convex (Fig. 111l). n. NT .... *adelaidae*, spec. nov.

– Generally smaller, length 6.15 mm, body more convex, with narrower pronotum and longer elytra, ratios w/l of pronotum 1.77, base/apex of pronotum 1.65, l/w of elytra 1.47. Basal angles of pronotum obtuse, surface extremely finely punctate, barely visible at 40×, not coriaceous. Aedeagus see figs 123g,h. Stylomere wide, triangular (Fig. 123l). n. NT .... *edithae*, spec. nov.

96. Large, length 6.5-6.9 mm, body wide, markedly depressed, colour light reddish, with very wide pronotum with wide base, ratios w/l of pronotum 1.84-1.88, base/apex >1.74. Apical angles of pronotum remarkably elongate, basal angles almost rectangular, markedly projecting posteriorly, base laterally distinctly concave (Fig. 113). Aedeagus see figs 112g,h. n. WA .... *rufescens*, spec. nov.

– Generally smaller, length <6.55 mm, body narrower, less depressed, colour either yellow, or darker reddish or reddish-piceous, with narrower pronotum and narrower base, ratio w/l of pronotum usually <1.8, base/apex <1.63, only in a single small, yellow species with obtuse basal angles and distinctly narrower base ratio w/l of pronotum >1.8. Apical angles of pronotum less elongate, basal angles rectangular or obtuse, more or less projecting posteriorly, base laterally less distinctly concave (Fig. 114, 298, 302-307). Aedeagus see figs 109g,h, 115g,h-119g,h .... 97.

97. Small, length 5.5 mm, colour yellow, with wide pronotum though narrow base, because lateral border much incurved towards base, ratios w/l of pronotum 1.83, base/apex 1.58. Basal angles of pronotum obtuse (Fig. 114). Elytra short, ratio l/w 1.3. Aedeagus see figs 115g,h. n. NT .... *flavus*, spec. nov.

– Generally larger, length >5.6 mm, colour dark reddish to piceous, with less wide pronotum and longer elytra, ratios w/l of pronotum <1.8, l/w of elytra >1.38. Lateral margin of pronotum less incurved towards base, base rectangular or obtuse, in latter case colour piceous with lighter margins. Aedeagus see figs 109g,h, 116g,h-119g,h .... 98.

98. Colour piceous, with rather distinct lighter margins of pronotum and elytra. Western Australia .... 99.

– Colour reddish, without lighter margins of pronotum and elytra. Eastern Australia .... 100.

99. Body longer, parallel, with narrower pronotum, ratios w/l of pronotum <1.72, l/w of elytra >1.62. Basal angles of pronotum rectangular, produced over base, base laterally sinuate. Aedeagus longer, with longer apex (Fig. 109g). n. WA .... *elongatulus* Macleay

– Body shorter, wider, with wider pronotum, ratios w/l of pronotum 1.8, l/w of elytra 1.4. Basal angles of pronotum obtuse, not produced over base, base straight. Aedeagus shorter, with shorter apex (Fig. 116g). s. WA .... *piceus*, spec. nov.

100. Microreticulation of surface much reduced, highly superficial, therefore surface glossy. Basal angles of pronotum barely prolonged over base, base not or far less concave. Elytra generally longer, ratio l/w 1.45-1.55. Apex of aedeagus widely rounded (Figs 117g, 118g) .... 101.

– Microreticulation of surface distinct, therefore surface dull. Basal angles of pronotum distinctly prolonged over base, base distinctly concave or sinuate. Elytra generally shorter, ratio l/w 1.38-1.46. Apex of aedeagus acute (Fig. 119g) .... 102.

101. Pronotum slightly narrower with narrower base, elytra generally slightly longer, ratios w/l of pronotum 1.63-1.69, base/apex 1.48-1.53, l/w of elytra 1.51-1.55. Base of pronotum almost straight. Aedeagus slightly longer with less widely rounded apex (Fig. 117g). se. Qld .... *longus longus*, spec. nov.

– Pronotum slightly wider with wider base, elytra generally slightly shorter, ratios w/l of pronotum 1.66-1.74, base/apex 1.58-1.62, l/w of elytra 1.45-1.53. Base of pronotum slightly concave. Aedeagus slightly shorter with widely rounded apex (Fig. 118g). ne. Qld .... *longus tropicus*, subspec. nov.

102. Pronotum slightly wider with wider base, elytra generally slightly shorter, ratios w/l of pronotum 1.64-1.72, base/apex 1.53-1.60, l/w of elytra 1.38-1.45. Microreticulation on pronotum distinct, rather coarse, slightly coriaceous. Puncturation of pronotum and elytra coarser (Fig. 458). Stylomere shorter and wider (Fig. 119l). e. SA, Vic, e. NSW, se. Qld .... *sinuaticollis sinuaticollis*, spec. nov.

– Pronotum slightly narrower with narrower base, elytra slightly longer, ratios w/l of pronotum 1.62, base/apex 1.51, l/w of elytra 1.46. Microreticulation on pronotum very fine, rather superficial, not coriaceous. Puncturation of pronotum and elytra fine (Fig. 459). Stylomere longer and narrower (Fig. 120l). ce. Qld .... *sinuaticollis calliope*, subspec. nov.

103. Colour black to dark piceous .... 104.

– Colour reddish to flavous (doubtful species under both couplets) .... 108.

104. Colour black, puncturation of elytra fine or very fine, barely visible at 40×. Aedeagus, when known, not markedly striate below .... 105.

– Colour piceous, puncturation of elytra coarse, well visible at 40×. Aedeagus markedly striate below (Fig. 179g). nw. Vic, WA .... *adustus*, spec. nov.

105. Surface with distinct microreticulation (at 64). Aedeagus sinuate near apex, apex acute (Fig. 159g). Stylomere elongate, apex oblique, apical half parallel (Fig. 159l). ce. and ne. Qld .... *obsoletus*, spec. nov.

– Surface without microreticulation (at 64). Aedeagus, when known, not sinuate, apex widely rounded (Figs 147g, 148g). Stylomere wider, apical half not parallel (Figs 147l-149l) .... 106.

106. Body wider and shorter, with very wide pronotum, ratios w/l of pronotum 2.03, base/apex of pronotum 1.68, l/w of elytra 1.33. Elytra narrowed from shoulders. Aedeagus see figs 148g,h. ne. Qld .... *ovatus*, spec. nov.

– Body narrower and longer, with less wide pronotum, ratios w/l of pronotum <1.85, base/apex of pronotum <1.57, l/w of elytra >1.38. Elytra parallel in basal half. Aedeagus see figs 147g,h, or unknown. Distribution different. .... 107.

107 Body wider and shorter, with shorter elytra, ratios base/apex of pronotum >1.50, l/w of elytra <1.44, length elytra/pronotum <2.57. Puncturation of elytra dense, fine, though well visible at 64x. Aedeagus see figs 147g,h. Stylomere without short seta(e) on lateral margin (Fig. 147l). n. NT, n. WA .... *multipunctatus*, spec. nov.

– Body narrower and longer, with longer elytra, ratios base/apex of pronotum 1.46, l/w of elytra 1.55, length elytra/pronotum 2.69. Puncturation of elytra extremely fine, barely visible at 64x. Aedeagus unknown. Stylomere with short seta(e) on lateral margin (149l). n. NT .... *browni*, spec. nov.

108. Lateral margin of elytra with a fringe of long setae at least in basal half .... 109.

– Lateral margin of elytra without a fringe of long setae .... 112.

109. Aedeagus elongate, lower surface evenly concave, apex acute, highly asymmetric, markedly turned laterally (Fig. 191g). Stylomere either parallel, with obliquely transverse apex, or at apex bituberculate (Figs 191l). n. Qld, n. NT, n. WA; ?Vic .... *laevis* Macleay

– Aedeagus shorter, lower surface almost straight, apex less asymmetric, barely turned laterally (Figs 192g, 194g). Stylomere wider, either widened towards apex, or with convex apex (Figs 192l, 194l) .... 110.

110. Elytra shorter, ratio l/w <1.54. Aedeagus less asymmetrically widened in middle (Fig. 194g), left paramere with distinctly narrowed apex (Figs 194k). Stylomere rather wide, with convex apex (Fig. 194l). s. WA .... *brevior*, spec. nov.

– Elytra longer, ratio l/w >1.6. Aedeagus more asymmetrically widened in middle (Fig. 192g), left paramere either with transverse apex, or with distinct hump at apex (Figs 192k, 193k). Stylomere wide, widened towards apex, apex transverse (Fig. 192l). Qld .... 111.

111. Pronotum generally less wide with narrower base, puncturation rather coarse. Left paramere straight at apex (Fig. 192k). ce. Qld .... *ciliatus ciliatus*, spec. nov.

– Pronotum wider with wider base, puncturation fine. Left paramere straight with distinct hump at bottom of apex (Fig. 193k). ne. Qld .... *ciliatus tenuipunctatus*, subspec. nov.

112. Head at 64× with distinct traces of microreticulation .... 113.

– Head at 64× without any traces of microreticulation .... 129.

113. ♂♂ .... 114.

– ♀♀ .... 121.

114. Aedeagus on ventral and lateral surfaces **distinctly** striate (Figs 177g-180g) .... 115.
– Aedeagus on ventral and lateral surfaces not **distinctly** striate .... 118.

115. Surface mostly piceous, rarely reddish. Pronotum and elytra remarkably densely and coarsely punctate. Pronotum wide, with wide base, ratios w/l of pronotum 1.69-1.78, base/apex 1.52-1.58. Aedeagus moderately asymmetric with acute apex, lower surface almost straight (Figs 179g,h), parameres rather elongate, not markedly triangular (Figs 179i,k). nw. Vic., WA .... *adustus*, spec. nov.
– Surface reddish. Pronotum and elytra less densely and coarsely punctate. Pronotum less wide, with slightly narrower base, ratios w/l of pronotum <1.68, base/apex <1.48. Aedeagus variable (Figs 177g,h, 178g,h, 180g,h), parameres less elongate, apex variable (Figs 177i,k, 178i,k, 180i,k) .... 116.

116. Aedeagus very asymmetric, more convex towards apex, laterally slightly impressed (Fig. 177g). Left paramere large, somewhat triangular (Fig. 177k). Puncturation on pronotum rather dense and fairly coarse, on elytra fine and sparse. Elytra longer at the average, ratio l/w 1.46-1.58. SA, Vic, w. NSW. c. NT .... *virgatus*
– Aedeagus less asymmetric, less convex towards apex, laterally not impressed (Figs 178g, 180g). Left paramere see figs 178k, 180k. Puncturation either dense and moderately coarse or sparse and very fine on both, pronotum and elytra. Elytra shorter at the average, ratio l/w <1.45 .... 117.

117. Puncturation of surface sparse and remarkably fine (Fig. 517). Aedeagus slightly narrower, faintly convex towards apex, lower surface convex (Figs 178g,h). Left paramere convex at apex (Fig. 178k). ♀ unknown. c. NT .... *brittoni*, spec. nov.
– Puncturation of surface very dense and fairly coarse (Fig. 519). Aedeagus slightly wider, faintly faintly concave towards apex, lower surface straight (Figs 180g,h). Left paramere triangular, with acute apex (Fig. 180k). ♀ unknown. NT .... *punctatissimus*, spec. nov.

118. Wide, remarkably depressed, yellowish species with wide pronotum, ratio w/l >1.7, and with widely channeled lateral margins (Fig. 363). Aedeagus symmetric, with shortly rounded apex (Fig. 175g). ne. Qld .... *luteus*, spec. nov.
– Less wide and depressed, reddish species with narrower pronotum, ratio w/l <1.7, with narrower, less channeled lateral margins. Aedeagus see figs 173g,h, 174g,h, 182g,h .... 119.

119. Aedeagus rather elongate, with almost straight lateral border and gently rounded apex (Fig. 173g). Left paramere rather narrow with acute apex (Fig. 173k). On the average rather large species with wide pronotum, wide base of pronotum and short elytra, ratios w/l of pronotum 1.58-1.70, base/apex 1.40-1.51, l/w of elytra 1.47-1.51. e. SA, w. Vic, w. NSW, w. Qld, c. NT .... *laticollis*, spec. nov.
– Aedeagus shorter, generally with more acute apex (Figs 174g,h, 182g,h). Left paramere wider with widely rounded or oblique apex (Figs 174k, 182k). On the average smaller species with less wide pronotum, narrower base of pronotum and longer elytra, ratios w/l of pronotum 1.47-1.60, base/apex 1.35-1.41, l/w of elytra 1.49-1.60. Distribution different .... 120.

120. Apical part of aedeagus slightly concave (Fig. 182g), left paramere at apex convex (Fig. 182k), ♂ sternum VII wider, base less convex (Fig. 182e). At the average pronotum narrower with narrower base, ratios w/l 1.47-1.58, base/apex 1.35-1.39. Puncturation of pronotum usually less rugose, puncturation of elytra usually sparser. ce. and ne. Qld .... *aequus*, spec. nov.
– Apical part of aedeagus straight or slightly convex (Fig. 174g), left paramere at apex oblique (Fig. 174k), ♂ sternum VII narrower, base distinctly convex (Fig. 174e). At the average pronotum wider with wider base, ratios w/l 1.52-1.60, base/apex 1.36-1.41. Puncturation of pronotum usually rugose, puncturation of elytra usually denser. NSW, e. Qld .... *cribricollis*, spec. nov.

121. Surface usually piceous, rarely reddish, pronotum and elytra remarkably densely and coarsely punctate (Fig. 518). Pronotum with wide base, ratio base/apex 1.52-1.58. Stylomere with rather elongate, parallel apex (Fig. 179l). nw. Vic., WA .... *adustus*, spec. nov.

– Surface reddish or yellowish, pronotum and elytra usally less densely and coarsely punctate. Pronotum commonly with narrower base, then ratio base/apex <1.51. When base wide, puncturation sparse and rather fine and stylomere polysetose (Fig. 189l) .... 122.

122. Large, length 6.65 mm, with wide base of pronotum, ratio base/apex 1.6. Puncturation of elytra rather sparse and fine (Fig. 528). Stylomere narrow, in middle barely sinuate, polysetose (Fig. 189l). ♂ unknown. n. WA .... *crassus*, spec. nov.

– Smaller, length <6.1 mm, with narrower base of pronotum, ratio base/apex <1.52. Puncturation of elytra variable, though commonly less fine on elytra. Stylomere commonly wider, in middle more or less distinctly sinuate, rarely with more than 4 setae (Figs 173l-177l, 182l, 190l) ..... 123.

123. Maxillary palpus rather narrow, apex of terminal palpomere as long as median border (Figs 174b, 182b). Pronotum rather narrow, with narrow base, ratios w/l 1.47-1.60, base/apex 1.35-1.41. e. Qld .... 124.

– Maxillary palpus rather wide, apex of terminal palpomere distinctly wider than median border (Figs 173b, 175b-177b, 190b). Pronotum rather wide, with wider base, ratios w/l 1.58-1.75, base/apex 1.36-1.56 .... 125.

124. At the average pronotum narrower with narrower base, ratios w/l 1.47-1.58, base/apex 1.35-1.39. Puncturation of pronotum usually less rugose, puncturation of elytra usually sparser. ce. and ne. Qld; ? NT .... *aequus*, spec. nov.

– At the average pronotum wider with wider base, ratios w/l 1.52-1.60, base/apex 1.36-1.41. Puncturation of pronotum usually rugose, puncturation of elytra usually denser. NSW, e. Qld .... *cribricollis*, spec. nov.

125. Pronotum very wide, with wide, distinctly explanate lateral margins, ratio w/l >1.72. Puncturation of surface fine and rather sparse (Figs 514, 515). Stylomere wide, almost regularly rhomboidal, with convex apex (Figs 175l, 176l) .... 126.

– Pronotum narrower, with less explanate lateral margins, ratio w/l <1.7. Puncturation of surface coarser and denser (Figs 512, 516, 529). Stylomere not rhomboidal (Figs 173l, 177l, 190l) .... 127.

126. Base of pronotum narrower, ratio base/apex 1.42. Antenna narrow and elongate, barely widened, ratio w/l of median antennomeres c. 1.5 (Fig. 176d). Puncturation of surface generally slightly coarser. Lateral plate of stylomere longer, basal margin not markedly concave (Fig. 176l). ♂ unknown. c. WA .... *houstoni*, spec. nov.

– Base of pronotum wider, ratio base/apex >1.52. Antenna short and wide, distinctly widened, ratio w/l of median antennomeres >2 (Fig. 175d). Puncturation of surface generally finer. Lateral plate of stylomere shorter, basal margin markedly concave (Fig. 175l). ne Qld .... *luteus*, spec. nov.

127. Palpi very wide, terminal palpomere of maxillary palpus c. 2 × as long as wide (Fig. 190b). Stylomere see fig. 190l. ♂ unknown. n. NT .... *latipalpis*, spec. nov.

– Palpi less wide, terminal palpomere of maxillary palpus <1.5 × as long as wide (Figs 173b, 177b). Stylomere see figs 173l, 177l .... 128.

128. Stylomere narrower, not as markedly narrowed towards apex (Fig. 177l). On the average base of pronotum narrower, ratio 1.36-1.48. SA, Vic, w. NSW, c. NT .... *virgatus*, spec. nov.

– Stylomere wider, markedly narrowed towards apex (Fig. 173l). On the average base of pronotum wider, ratio 1.40-1.51. e. SA, w. Vic, w. NSW, w. Qld, c. NT .... *laticollis*, spec. nov.

129. ♂♂ .... 130.

– ♀♀ .... 137.

130. Aedeagus irregularly shaped, bisinuate on both lateral margins, apex somewhat knob-like (Fig. 181g). e. Qld .... *queenslandicus*, spec. nov.

– Aedeagus not irregularly shaped, not bisinuate on both lateral margins, apex shortly rounded or acute (Figs 170g, 171g, 172g, 183g, 185g, 186g, 188g) .... 131.

131. Aedeagus on lower and lateral surfaces distinctly striate, lower surface straight, apex acute (Figs 183g,h). Left paramere convex at apex (Fig. 183k). Genital ring slightly asymmetric, lateral arms not markedly convex (Fig. 183f). Pronotum generally wider, with wide base, ratios w/l of pronotum 1.55-1.62, base/apex 1.47-1.53. ne. Qld .... *palumae*, spec. nov.

– Aedeagus on lower and lateral surfaces not distinctly striate, lower surface varied, apex commonly convex (Figs 170g,h, 171g,h, 172g,h, 185g,h, 186g,h, 188g,h), though when apex rather acute, then lower surface convex, then left paramere at apex transverse, arms of genital ring markedly convex, and pronotum narrower with narrower base, ratios w/l <1.51, base/apex <1.42 .... 132.

132. Aedeagus wide, highly asymmetric, apex rather acute, lower surface slightly convex (Figs 172g,h). NSW. Qld .... *foliaceus*, spec. nov.

– Aedeagus usually narrower, less asymmetric, apex rounded, lower surface straight or concave (Figs 170g,h, 171g,h, 185g,h, 186g,h, 188g,h). When aedeagus rather wide, then far less asymmetric and apex widely convex .... 133.

133. Aedeagus wide, in middle markedly widened, lateral margins near apex straight or even slightly concave, apex widely convex (Fig. 171g). sw. WA .... *distinguendus*, spec. nov.

– Aedeagus unusally less wide, when wide, then lateral margins near apex evenly convex (Figs 170g, 185g, 186g, 188g) .... 134.

134. Apex of aedeagus widely rounded off (Figs 185g, 188g) .... 135.

– Apex of aedeagus shortly rounded off (Figs 170g, 186g) .... 136.

135. Smaller, length <4.3 mm, body more convex, pronotum narrower with narrower base, ratios w/l of pronotum <1.5, base/apex <1.41. Aedeagus shorter and wider (Fig. 185g), left paramere at apex convex (Fig. 185k). s. SA, n. Vic, sw. Qld .... *flavescens*

– Larger, length 5.5 mm, body more depressed species, pronotum wider with wider base, ratios w/l of pronotum >1.52, base/apex >1.48. Aedeagus longer and narrower (Fig. 188g), left paramere at apex straight (Fig. 188k). s. WA .... *crucis*, spec. nov.

136. Aedeagus narrower, lateral margin near apex faintly concave (Fig. 170g). Genital ring markedly asymmetric (Fig. 170f). Puncturation of elytra less coarse and dense, on the average 3 punctures pro interval. e. SA, Vic, ACT, NSW, Qld, c. NT, s. WA .... *rubiginosus* Newman

– Aedeagus wider, lateral margin near apex convex (Fig. 186g). Genital ring less asymmetric (Fig. 186f). Puncturation of elytra coarser and denser, on the average 4 punctures pro interval. ♀ unknown n. WA .... *grossepunctatus*, spec. nov.

137. Tergum VIII with additional lateral setae. Apical setae of stylomere markedly elongate. Apex of stylomere wide, rather obliquely transverse, the latero-apical angles rounded (Fig. 172l). NSW. Qld .... *foliaceus*, spec. nov.

– Tergum VIII without additional lateral setae. Apical setae of stylomere not markedly elongate. Sytlomere variable, though when wide and obliquely transverse, the latero-apical angles pronounced (Figs 170l, 171l, 181l, 183l-185l, 187l, 188l) .... 138.

138. Apex of stylomere wide, obliquely transverse, the latero-apical angle pronounced, lateral plate elongate (Fig. 170l). Puncturation of pronotum dense and rather coarse. SA, Vic, ACT, NSW, Qld, c. NT, s. WA .... *rubiginosus* Newman

– Apex of stylomere different, when rather obliquely transverse, then either lateral plate shorter and pronotum wider, or puncturation of pronotum sparser and much finer .... 139.

139. Apex of stylomere markedly convex on median side (Figs 181l, 183l, 188l). Puncturation of surface always rather coarse and dense. Pronotum rather wide, ratio w/l usually >1.55, when <1.55, then surface with markedly coarse and dense puncturation .... 140.

– Apex of stylomere straight or oblique (Figs 171l, 184l, 185l, 187l). Puncturation of surface varied. Pronotum rather narrow, ratio w/l <1.55, when >1.5, then surface with less corse and dense puncturation .... 142.

140. Stylomere narrow, apex acute (Fig. 188l). Larger, length 5.5 mm. s. WA .... *crucis*, spec. nov.
– Stylomere wider, apex convex (Figs 181l, 183l). Smaller, length <5.3 mm. Qld .... 141.

141. Base of pronotum narrower, elytra generally longer, ratios w/l of pronotum 1.41-1.46, l/w of elytra 1.51-1.57. e. Qld .... *queenslandicus*, spec. nov.
– Base of pronotum wider, elytra generally shorter, ratios w/l of pronotum 1.47-1.53, l/w of elytra 1.48-1.54. ne. Qld .... *palumae*, spec. nov.

142. Smaller, length <4.9 mm, colour yellowish to light reddish, with shorter elytra, ratio l/w <1.55. Elytra with rather coarse to very coarse puncturation (Figs 510, 524). Lateral plate of stylomere short (Figs 171l, 185l) .... 143.
– Larger, length >5.4 mm, colour reddish, with longer elytra, ratio l/w >1.64. Elytra generally with less coarse puncturation (Figs 523, 526). Lateral plate of stylomere elongate (Figs 184l, 187l) .... 144.

143. Pronotum narrower with narrower base, ratios w/l 1.40-1.51, base/apex 1.38-1.41. Puncturation of elytra very coarse (Fig. 524). Stylomere see fig. 185l. s. SA, n. Vic, sw. Qld .... *flavescens*, spec. nov.
– Pronotum wider with wider base, ratios w/l 1.51-1.55, base/apex 1.44-1.48. Puncturation of elytra less coarse (Fig. 510). Stylomere see fig. 171l. sw. WA .... *distinguendus*, spec. nov.

144. Puncturation coarser, on elytra also denser (Fig. 523). Pronotum narrower with narrower base, ratios w/l 1.47, base/apex 1.43. Stylomere see fig. 184l. ♂ unknown. ce. Qld .... *angustatus*, spec. nov.
– Puncturation finer, on elytra also sparser (Fig. 526). Pronotum wider with wider base, ratios w/l 1.55, base/apex 1.5. Stylomere see fig. 187l. ♂ unknown. w. SA .... *ooldeae*, spec. nov.

7.3.4. The species of the genus *Adelotopus* Hope

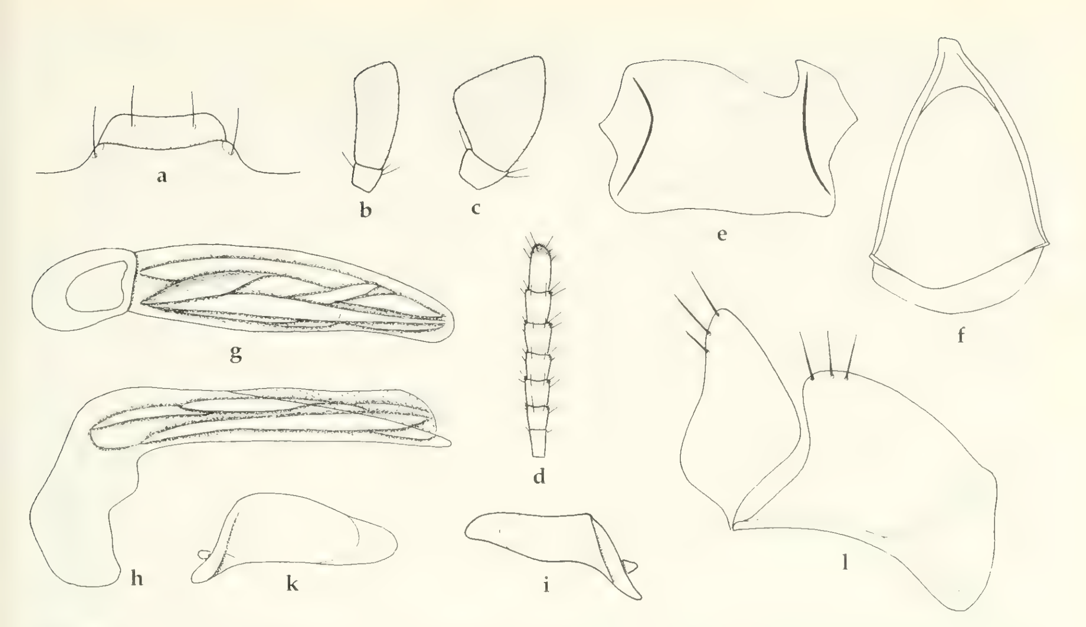
dytiscides-group

Diagnosis. Large, fairly wide, rather depressed, uniformly black species at most with indistinct reddish apex of elytra. Labrum bisetose; glossa c. 8-setose; lateral margin of pronotum more or less widely explanate, basal angles angulate; basal border line of elytra complete or almost so, usually meeting behind scutellum, always completely visible; scutellar pore absent; lateral margin of elytra usually without elongate setae behind shoulders, only in one species a short row of setae present; series of umbilical pores with 6 subhumeral pores and 1 postmedian pore; abdominal sterna with at least 1 ambulatory seta each side; sternum VI usually with a fringe of longer setae at apical margin; tibiae, especially metatibia depressed; mesofemur and metafemur wide and depressed, profemur less wide; internal sac of aedeagus simple, without oblique fold near apex; apex of ♀ tergum VIII without setae.

Larvae. 1st instar larvae known of 4 species.

Distribution. 7 species from eastern Australia, southwestern Australia, and Papua New Guinea.

Systematic position. This group is perhaps most generalized in several aspects, e.g. large size, wide body shape, rather large number of umbilical setae and of abdominal setae, comparatively simple aedeagus. Most species look externally rather similar to primitive species of *Pseudomorpha*. Apparently *A. dytiscides* is the most primitive species of this group and perhaps altogether of the entire genus.



Figs 100a-l. *Adelotopus dytiscides* Newman. Details of head and genitalia. **a.** Labrum. **b.** Lower surface of terminal palpomeres of maxillary palpus. **c.** Lower surface of terminal palpomeres of labial palpus. **d.** 5th-11th antennomeres. **e.** ♂ sternum VII. **f.** ♂ genital ring. **g.** Lower surface of aedeagus. **h.** Lateral view of aedeagus. **i.** Right paramere. **k.** Left paramere. **l.** ♀ stylomeres and lateral plate.

Adelotopus dytiscides Newman, 1842
Figs 1, 30, 97-100, 289, 438, 603

Adelotopus dytiscides Newman, 1842, p. 365; Westwood 1853, p. 405, pl. 14, fig. 2; Lacordaire 1854, p. 154; Sloane 1898, p. 514 (*dytiscoides*); Blackburn 1901, p. 18; Lea 1910, p. 121 (*dytiscoides*); Notman 1925, p. 7, 10, 28 (*dytiscoides*); Csiki 1933, p. 1635; Matthews 1980, fig. 78 (*dytiscoides*); Erwin 1981, p. 64, fig. 28; Moore et al. 1987, p. 50.

Adelotopus fortnumi Hope, 1845, p. 105; Westwood 1853, p. 406; Lacordaire 1854, p. 154; Notman 1925, p. 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50 (synonymy confirmed by Notman 1925).

Adelotopus mastersii Macleay, 1871, p. 94; Notman 1925, p. 7, 10, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 51 (**new synonymy**).

Types. Of *dytiscides*. Lectotype (by present designation): ♀, Type H.T., A. H. Davis, Adelaide, *Adelotopus dytiscoides* Type Newman, Ent. Club 44-12 (BMNH).

Of *fortnumi*. Lectotype (by present designation): ♂, Type Westwood, Trans. Ent. Soc. 1845. p. 105 Coll. Hope Oxon., *Fortnumi* Hope, Type Col: 20 4/4 *Adelotopus fortnumi* Hope, Hope Dept. Oxford (OUM). – Paralectotypes: 1♀, *A. Fortnumi* Hope N. Holland, Type Col: 20 2/4 *Adelotopus fortnumi* Hope, Hope Dept. Oxford (OUM); 1♀, *Adelotopus Fortnumi* Hope, Type Col: 20 3/4 *Adelotopus fortnumi* Hope, Hope Dept. Oxford (OUM); 1♀, 43 ten, *Adelotopus Fortnumi* Hope, Type Col: 20 1/4, Hope Dept. Oxford (OUM).

Of *mastersii*. Lectotype (by present designation): ♀, Gayndah, Syntype, *Adelotopus mastersii* Macl. Gayndah Qld Syntype *mastersii* (ANIC-MMS). – Paralectotype: ♀, K 12204, *Adelotopus mastersii* Macl. Gayndah, Holotype (AMS).

Note. The sample from BMNH includes another specimen of *dytiscides* bearing a (printed) label "Type". It cannot serve as a type, however, because it lacks a locality label.

The synonymy of *fortnumi* with *dytiscides* firstly stated by Notman (1925), as well as the new synonymy of *mastersii* with *dytiscides*, is confirmed in present paper by comparison of the types.

Type localities. Of *dytiscides*: "Adelaide", South Australia. – Of *fortnumi*: From description: "Adelaide", South Australia. – Of *mastersii*: "Gayndah", Queensland.

Diagnosis. Large, wide, moderately depressed, uniformly black species with straight base of pronotum and rasp-like punctures marking the elytral striae. Distinguished from other species by large size, not horseshoe-shaped elytral punctures, and elongate, narrow, rather symmetric aedeagus.

Description

Measurements. Length: 7.4-10.2 mm. Ratios. Width/length of pronotum: 1.75-1.88; width base/apex of pronotum: 1.80-1.95; width pronotum/head: 1.92-2.03; length/width of elytra: 1.38-1.46; length elytra/pronotum: 2.48-2.66.

Colour. Black, lateral borders of pronotum and elytra somewhat reddish-piceous translucent. Lower surface, antennae, mouthparts, and legs dark reddish-piceous, lower surface of head dark piceous.

Head (Figs 98, 99, 100a-d, 289). Short and wide, rather depressed. Anterior border feebly convex, lateral border feebly angular. Clypeal suture shallow, though usually complete and distinct, semicircular. Labrum comparatively large, apex slightly concave, bisetose, though sometimes asymmetrically with an additional seta. Antennal groove laterally barely bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, though wide, at apex rounded off. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically rounded, ventrally with keel, at border with c. 8 elongate setae and additional dense pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus narrow, apex feebly widened, barely securiform. Terminal palpomere of labial palpus large, strongly widened, trhough not wider than long, securiform. Antenna relatively elongate, 8th-9th antennomeres c. as long as wide. Microreticulation dense and distinct, puncturation rather dense, surface with a shallow sulcus medially of eyes and usually with some fine longitudinal strioles on frons, impilose, markedly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field densely punctate and setose. Both palpi, as well as gula rather densely setose.

Pronotum (Figs 30, 289). Very wide, but moderately convex, base almost 2 × as wide as apex. Apical angles remarkably produced, acute, attaining at least middle of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest in basal third or even at basal angles, barely or not at all bordered, but, especially apically, widely explanate. Basal angles rectangular or slightly obtuse, at apex slightly rounded off, base almost straight, not bordered. Microreticulation dense and very distinct, almost isodiametric, puncturation fine, difficult to detect, surface with several fine, irregular strioles, impilose, dull.

Elytra (Figs 30, 289, 438). Moderately elongate and convex, in basal two fifth rather parallel, then gently narrowed. Apex slightly oblique, truncature feebly concave, dehiscent at suture. Shoulders obtuse, basal margin oblique, with a row of many short setae. Basal border line complete, meeting at suture. Marginal channel rather wide, slightly widened in basal fourth, completely visible from above. Lateral border asetose or with but 1-2 short setae just behind shoulders. Series of umbilical pores consisting of 6 pores behind shoulder and 1 pore at or slightly behind middle. Setae short. Striae almost completely reduced, but sometimes sutural stria just visible as a row of extremely fine strioles, or even traces of the internal striae visible at apex. Microreticulation dense and very distinct, puncturation dense and rather coarse, punctures becoming fairly rasp-like towards apex. Surface impilose, markedly dull.

Lower surface. Prosternal process rather elongate, straight, moderately depressed, apex rectangular, shortly setose. Metepisternum elongate, >2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna with 4-6 setae each side, sternum VI in both sexes with many (c. 16-30), fairly elongate setae at and near apical border. Whole lower surface rather densely pilose.

Legs. Elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur comparatively shallow, anterior plate only at apex distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 100e-k). Genital ring rather asymmetric, laterally convex. Sternum VII apically deeply excised, basally slightly bisinuate, laterally short. Aedeagus elongate, narrow, depressed, rather symmetric, lower surface straight. Lateral border wide throughout. Apex widely rounded off. Internal sac rather simple. Both parameres rather similar, elongate, with obtuse apex.

♀ genitalia (Fig. 100l). Stylomere triangular, rather wide, with 2-4 subapical setae. Lateral plate moderately elongate, with 2-3 apical setae.

Variation. Due to extensive range and large number of specimens available, rather wide variation noted, especially in shape and relative width of pronotum which may be slightly narrower and more incurved to base, by relative length of elytra, and density of microreticulation and puncturation. Otherwise, a rather homogenous species. The types of *mastersii* are founded on relatively small, convex specimens with basally more rounded pronotum.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. A common and widespread species, apparently occurring in a variety of more or less open forests and woodlands, collected by me under bark of different eucalypts. Although few collecting circumstances are noted, these show a rather different range: repeatedly under bark of unspecified eucalypts, one "from Red Gum bark at night", but also "on *Melaleuca*", "in woodland", "on car", and some specimens "from ant nest". One specimen is mounted together with the presumable host ant of the genus *Camponotus* Mayr (species near *nigriceps* Sm.) on the same card. Dated specimens collected from September to April and in June, but most in the period from October to November.

Distribution (Fig. 603). Southeastern Australia from eastern half of South Australia to central Queensland, southwestern corner of Western Australia, ? Tasmania. This last record is rather doubtful.

Material examined (658). **SA**: 1♀, Type H.T., A. H. Davis, Adelaide, *Adelotopus dytiscoides* Type Newman, Ent. Club 44-12 (BMNH); 1♀, Ent. Club 44.12, A. H. Davis, Adelaide, det. *dytiscoides* (BMNH); 1♂, Adelaide, 9.XI.12, Griffith, Griffith Coll., Id. by A. M. Lea (SAMA); 1♀ (?), Adelaide 1871, *gyrinoides* Hope, Nov. Holl. (NHMW); 3♂♂, 1♀, Adelaide, A. H. Elston, A. H. Elston Coll., *Adelotopus dytiscoides* Newm. (AMS); 1♂, Adelaide, *gyrinoides* Hope, Coll. L. W. Schaufuss, det. *dytiscoides* (MNHB); 1♀ (?), 41406 Adelaide Schaub., det. *dytiscoides* (MNHB); 1♀, Adelaide, Bowring 63.47, *A. Fortnumi* Hope, det. *dytiscoides* (BMNH); 1♀, Sharp Coll., *Adelotopus ipsoides* Westw., Adelaide, det. *dytiscoides* (BMNH); 1♀, *Dytiscoides* Newm., *gyrinoides* Germ., Adelaide, Sharp Coll. (BMNH); 1♂, 2♀♀, Adelaide Hart, Sharp Coll., det. *dytiscoides* (BMNH); 1♀ (?), Adelaide, Sharp Coll., det. *dytiscoides* (BMNH); 1♀, Adelaide, det. *dytiscoides* (BMNH); 1♂, Adelaide Griffith '04, E. W. Ferguson Coll., *Adelotopus dytiscoides* Newm. (ANIC); 1♂, 1♀, Adelaide, *Adelotopus gyrinoides* Hope, H. Burnside (?) 239 (SAMA); 2♀♀, Adelaide Blackburn (SAMA); 1♂, Adelaide, *dytiscoides* W., Id. by A. M. Lea, Lea Dup. (SAMA); 1♂, Adelaide, Lea Dup. (SAMA); 1♂, *Adelotopus* Adelaide (OUM); 1♀, *Gyrinoides* Hope Adelaide (OUM); 1♀, Adelaide (OUM); 1♂, A. H. Davis, Adelaide E. Newman, W (OUM); 1♂, Adelaide, ?, W. (OUM); 1♀, Adel., *Adelotopus gyrinoides* Hope (OUM); 6♀♀, Adelaide Coll. Castelnau (MCSN); 1♀, Adelaide, *Adelotopus fortnumi* Adelaide, *Adelotopus dytiscoides* Newm. (NHMB); 1♀, Adelaide (NHMB); 1♀, Adelaide, *Axinophorus* n. sp., *A. haemorrh. inquinatus* Newm. (NHMB); 1♂, Adelaide, *inquinatus* Adelaide (NHMB); 1♀, Clarendon, Griffith Coll. Id. by A. M. Lea (SAMA); 1♂, Mt. Pleasant, 8.XI.86 Tepper, det. *dytiscoides* (MCZ); 1♀, Mt. Lofty, J. G. O. Tepper, *A. dytiscoides* N. As id. by Blackburn (MCZ); 1♀, Mt. Lofty, J. G. O. Tepper, Ex coll. SA Mus., *A. dytiscoides* Newm. As id. by Blackburn (ANIC); 2♀♀, Mt. Lofty Rgs. H. Curnow, E. W. Ferguson Coll. (ANIC); 1♂, 2♀♀, Mt. Lofty, J. G. O. Tepper (SAMA, UQIC); 1♂, Mt. Lofty, J. G. O. Tepper, *Adelotopus dytiscoides* Newm., Id. by R. Harvey (SAMA); 2♂♂, 6♀♀, Mt. Lofty Rgs. S. H. Curnow, *dytiscoides* Newm., Id. by A. M. Lea, Lea Dup. (SAMA); 1♂, 3♀♀, Mt. Lofty Rgs. S. H. Curnow, ac. 23246, *dytiscoides* Newm. (AMNH); 1♀, Belair 4.X.85, Tepper (SAMA); 1♂, Hahndorf, H. J. Carter Coll., det. *dytiscoides* (NMV); 1♂, 5♀♀, Yorketown, CNHM 1955, Karl Brancsik Coll, ex Eduard Knirsch, *Adelotopus dytiscoides* det. Ball (FMNH, UASM); 1♀, Maitland, Yorke Pen. 11.XI.1964, D. Wright (SAMA); 1♂, Cleve (UQIC); 1♀, Pt. Lincoln: Lea (SAMA); 1♀, Kangaroo Is. J. G. O. Tepper (SAMA); 1♂, 1♀, Kangaroo I., F. Wood Jones (SAMA); 2♀♀, Blackburn, ditto S. Australia 797 Quor (SAMA); 1♂, Parachilna, H. Hale, Flinders Range (SAMA); 1♂, Williamston, 20.X.88 Tepper, *dytiscoides* Newm. Id. by A. M. Lea (UQIC); 1♀, *A. dytiscoides* Newm. v. Müller 77 (SMNS); 1♀, v. Müller 77, Müller 1872, Alte Sammlung (SMNS); 1 (?), *dytiscoides* Newm. (ANIC); 1♀, Janson Acq. 1884 (MNHN); 2♀♀, *Adelotopus colymbetoides* 9°24. (Bakewell), det. *dytiscoides* (BMNH); 1♀, Pascoe Coll., det. *dytiscoides* (BMNH); 1♂, det. *dytiscoides* (BMNH); 1♂, W. Edwards, det. *dytiscoides* (MCZ); 1♂, 1♀ (?); ?, 10.X.32, Ex Coll. H. V. Southcott (SAMA); 1♂, Rev. A. F. Burgess, Lea Dup. (SAMA); 1♀, C. French's Coll., det. *mastersii* (NMV); 1♀, C. French's Coll., *Adelotopus gyrinoides* (Hope), det. *mastersii* (NMV); 2♂♂, 1♀ (NMV). – **Vic**: 1♂, Mallee District, C. French's Collection, det. *mastersii* (NMV); 1♂, 1♀, Kaniva, 27.X., 28.X., J. Sedlacek (CSB); 1♂, 8 km W. of Kaniva, 21.X.1963, J. Sedlacek (BMH); 4♀♀, Little Desert, 21.X.46-173 (NMV); 1♀, Sea Lake, IV.1914 Goudie, *Adelotopus dytiscoides* Newm. (NMV); 1♂, Grampians XI.92 (NMV); 1♀, K. Guichard, Hall's Gap, *Adelotopus dytisccoides* (BMNH); 1♀, Birchip, 20, *Adelotopus dytiscoides* Newm., J. C. Goudie Collection (NMV); 1♂, 15 km W. Ballarat, 12.XI.1969, E. F. Riek (ANIC); 1♀, Bacchus Marsh XII., *gyrinoides* Hope C. Langenhan, Samml. O. Langenhan (SMTD); 2♀♀, Bacchus Marsh, XII.1904, Van Dyke Coll., *Adelotopus dytiscoides* Newm. (CAS); 1♀, Bacchus Marsh XII.03 (NMV); 1♂, Geelong, Davey, *dytiscoides* N., Id. by A. M. Lea, S. Aust. (SAMA); 1♀, 1683, Goul, *dytiscides* Newm. Port Philipp (MNHB); 1♀, Pt. Philip, 691 *Adelotopus fortnumi* Hope (OUM); 3♀♀, Melbourne Coll. Castelnau, Adel. Dytiscoides New. Melbourne (MCSN); 1♀, Melbourne Coll. Castelnau, *Dytiscoides* New. *gyrinoides* Germ. Melb.

(MCSN); 1♂, 3♀♀, Melbourne Coll. Castelnau (MCSN); 1♀, Melbourne, Deane (UQIC); 1♂, *Adelotopus gyrinoides* Hope Melbourne, det. *dytiscoides* (MNHB); 2♀♀, Melbourne, det. *dytiscoides, fortnumi* Hope, Pascoe Coll. (BMNH); 1♂, Melbourne, det. *dytiscoides* (BMNH); 1♀, Melbourne Bowring 63-47, det. *dytiscoides* (BMNH); 1♀, Melbourne, W. Edwards, det. *dytiscoides* (MCZ); 1♀, Melbourne, *Adelotopus* Hope (HNMB); 1♀, Melbourne No. 664, Ejnar Fischer (NHRS); 1♀, Melbourne F. E. Wilson 14.XII.18, *Adelotopus dytiscoides* Newm. Id. by T. G. Sloane, F. E. Wilson Coll. (NMV); 2♀♀, Melbourne, Coll. C. Felsche, det. *dytiscoides* (SMTD); 1♀, Melbourne (NHRS); 1♀, From D. Howitt, *Adelotopus dytiscides* Newm. Melbe. (NMV); 2♀♀, Austral mér. Melb. Melly, Australie, Ex Musaeo Mniszech, det. *dytiscoides* Newman (MNHN); 1♀, *A. ditiscoides* Nwm. P. Philip (?), Soc. Ent. Belg, Coll. PUTZEYS, *Adelotopus dytiscoides* Newm. dét. J. Putzeys (IRSNB); 1♀, Ringwood, 15.XI.11. 18/22, H. Pottinger (QMB); 2♀♀, F. T. Gully (UQIC); 1♀, Kerrisdale 1.I.24 (NMV); 3♀♀, Vic 142, Big River, 20 km ssw Jamieson, Lake Eildon SP, 16.XII.1990, M. Baehr (CBM); 1♀, 12 km SE Merrijig, Howqua River 30.XI.1971, Neboiss, det. *dytiscoides* (NMV); 3♀♀, Vic 140, 20 km s. Mansfield, 16.XII.1990, M. Baehr (CBM); 6♀♀, Vic 130, 15 km s. Mt. Beauty, 13.XII.1990, M. Baehr (CBM); 3♂♂, 3♀♀, Eltham, 17.IV.23, 17.IX.27 (NMV); 1♀, Eltham J. F. Dixon (NMV); 1♂, 1♀, Benalla Helms X-XII.89, *Adelotopus gyrinoides* Hope, Helms Coll. (BMH); 2♀♀, Benalla Helms, *Adelotopus mastersii* Macl. (BMH); 1♀, Benalla, *Adelotopus dytsicoides* Newm., Lea Dup. (SAMA); 1♀, Benalla (SAMA); 1♀, Black Rock, J. F. Dixon (NMV); 1♂, Tarawara 10.XI.1912 (NMV); 1♂, Ocean Grove 22.X.54 A. N. (NMV); 1♀, C. E. Clarke Coll., Koetong N. Vic. 19.XI.30 (BMNH); 1♀, Cadwega 20.XI.30, C. E. Clarke Coll. (BMNH); 1♀, Clifton 22.X.04, *Adelotopus dytiscoides* Newm., Griffith Coll. Id. by A. M. Lea (SAMA); 1♀, Melton, XI.40. F. E. W., J. G. Brooks Bequest, 1976 (ANIC); 1♀, Rushworth 18.XI.51, F. E. Wilson, *Adelotopus dytiscoides* Newm., ex Coll. F. E. Wilson (WAM 87/2169); 1♀, Rushworth XII.45, FEW, J. G. Brooks Bequest, 1976 (ANIC); 3♀♀, 6 ml. SE. of Rutherglen, 3.XI.1950, J. H. Calaby (ANIC); 1♂, 1♀, Kandella, S. Gippsland, French, Coll. Kraatz, det. *dytiscoides* (DEIB); 1♀, Sea Lake, X.1915, Goudie (SAMA); 1♂, Alexandra, CNHM 1955, Karl Brancsik Coll, ex Eduard Knirsch, *dytiscoides* Newm. det. G. E. Ball (FMNH); 1♀, Alexandra, CNHM 1955, Karl Brancsik Coll, ex Eduard Knirsch (UASM); 2♀♀, Upper Ovens R., 25.XII.59, B. P. Moore (CMC); 2♂♂, 2♀♀, Victorian Alps Blackburn, *Dytiscoides* Newm., *Adelotopus dytiscoides* N. 797 AL (SAMA); 2♀♀, Victorian Alps Blackburn, 797 AL (SAMA); 1♂, Vict. Alps No. 664 Ejnar Fischer, *Adelotopus dytiscoides* Newm. Id. E. Fischer (NHRS); 1♀, Vict. Alps No. 664 Ejnar Fischer (NMV); 1♂, 2♀♀, Mitcham, 15.XI.58, B. P. Moore, *Adelotopus* nr. *dytiscoides* Newm., det. B. P. Moore (CMC); 3♂♂, 9♀♀, 34.35S, 132.46E, Robinvale, 25.X.-3.XI.1988, T. Weir, J. Lawrence & M. Harrison (ANIC); 1♂, Ocean Grove, H. W. Davey (UQIC); 1♂, 1♀, Kiata, 31.X.50 F. E. Wilson, F. E. Wilson Collection, det. *dytiscoides* (NMV); 1♀, Kiata XI.58 F. E. Wilson, F. E. Wilson Coll., det. *dytiscoides* (NMV); 1♀, Woori Yallock 29.XII.36. F. E. Wilson, F. E. Wilson Coll., det. *dytiscoides* (NMV); 1♀, Noble Park, F. E. Wilson 9.XI.18, *Adelotopus dytiscoides* Newm. (CAS); 1♂, Linga, X.1922 F. E. Wilson, *Adelotopus dytiscoides* Newm., F. E. Wilson Collection (NMV); 1♂, 1♀, Janson Acq. 1884 (MNHN); 2♀♀, CNHM 1955, Karl Brancsik Coll, ex Eduard Knirsch, *Adelotopus dytiscoides* Nemw. det. G. E. Ball 1987 (FMNH, UASM); 6♂♂, 21♀♀, det. *dytiscoides* (MNHB); 1♀, *gyrinoides* Hp., det. *dytiscoides* (MNHB); 1♂, 1♀, Lane, S. Rolle V. 94911, det. *dytiscoides* (MNHB); 1♂, Sharp Coll., *Adelotopus dytiscoides* Newm. (BMNH); 1♂, Edwards, *Adelotopus dytiscoides* Westw., Sharp Coll. (BMNH); 1♀, Edwards, Fry Coll., det. *dytiscoides* (BMNH); 1♀, Fry Coll., det. *dytiscoides* (BMNH); 1♀, 1937, M. F. C., det. *dytiscoides* (BMNH); 3♀♀, M. F. C. 1935, det. *dytiscoides* (BMNH); 2♀♀, Helms, W. W. Froggatt Coll. *Adelotopus dytiscoides* Newm. (ANIC); 1♀, D. Castelnau 1867, *Adelotopus dytiscoides* Newm. teste Putzeys (MCSN); 1♂, *Adelotopus dyticides* (sic!) Newm., 8 Howitt Colln. (NMV); 1♂, 1♀, NO. Collection Hy. Edwards, det. *dytiscoides* (AMNH); 1♂, 2♀♀, Edwards Coll., det. *dytiscoides* (AMNH); 2♀♀, 2593, det. *dytiscoides* (AMNH); 1♂, Museum Leiden ex collection C. J. Louwerens rec. 1979, *Adelotopus dytiscoides* Newm. det. Darlington '48 (NNML); 1♀, (not readible), *Adelotopus dytiscoides* Newm. (NMV); 1♂, 4♀♀ (NMV). – **Tas:** 1♀, 25903, det. *dytiscoides* (AMNH). – **ACT:** 1♀, J. W. Evans, Canberra F.C.T. 6.XI.1919 (ANIC); 1♂, J. W. Evans, Canberra FCT 6.II.1929 (ANIC); 1♂, 1♀, Canberra I.1960, D. Carne (ANIC); 1♀ (?); Canberra 16.X.63, J. Sedlacek (CSB); 1♀, Canberra, NSW 1926 (ANIC); 2♀♀, Red Hill, 23.XI.1968 K. Pullen, Kim Pullen Coll. (ANIC); 1♂, Black Mtn. 20.XI.66 K. Pullen, Kim Pullen Coll. (ANIC); 1♀, Black Mtn. 31.X.67 K. Pullen, Kim Pullen Coll. (ANIC); 1♂, Black Mt., XI.65, K. Pullen, *Adelotopus mastersii*, Kim Pullen Coll. (ANIC). – **NSW:** 1♀, Bombala K 2389 (AMS); 3♀♀, Illawarra, G. E. Bryant, 17.IX.08, G. Bryant Coll, det. *dytiscoides* (BMNH); 1♂, 34.24S, 143.14E, 3 km NW of Bramah H.S. NW of Balranald, 24.X.1983, D. C. F. Rentz & M. S. Harvey Stop 35 (ANIC); 1♀, Brocklehurst (32.11S, 148.38E) 29.IX.71, S. Misko (ANIC); 2♂♂, 2♀♀, Sydney Coll. Castelnau (MCSN); 1♀, Sydney K.12228 (AMS); 2♂♂, 3♀♀, S. Australia, Sydney, Taylor, *Adelotopus dytsicoides* Newm. Bel. 02 (AMS); 1♂, Sydney Deane (NMV); 1♀, Sidney, *Adelotopus dytiscoides* Newm., Coll. L. W. Schaufuss (MNHB); 4♀♀, Sydney X.02, Helms Coll., *Adelotopus gyrinoides* Hope (BMH); 1♀, N. Sydney, G. E. Bryant, 7.X.08, G. Bryant Coll, *Adelotopus Dytiscides* Newm. (BMNH); 2♂♂, N. Sydney, G. E. Bryant, 3.X.08, 30.XI.08, G. Bryant Coll, det. *dytiscoides* (BMNH); 3♀♀, Newport, N. Sydney, G. E. Bryant 23.X.08, G. Bryant Coll., det. *dytiscoides* (BMNH); 1♀, North Shore, Taylor, Coll. Hacker, *Adelotopus dytiscides* Newm. (DEIB); 1♀, Sydney district, J. J. W. X.1900, *Adelotopus gyrinoides* Hope, det. *dytiscoides* (BMNH); 1♂, between Orange and Sydney, Hale 5.X.29 (ANIC); 1♂, Lane Cove, 15.II.1948, H. W. Rudd (AMS); 1♀, Canterbury IX.01, H. J. Carter Coll., *Adelotopus dytiscoides* Newm. (NMV); 1♂, Mt. Wilson, 23.IX.1972, D. A. Doolan, D. A. Doolan Coll. (AMS); 1♂, Mt. Wilson X.1930

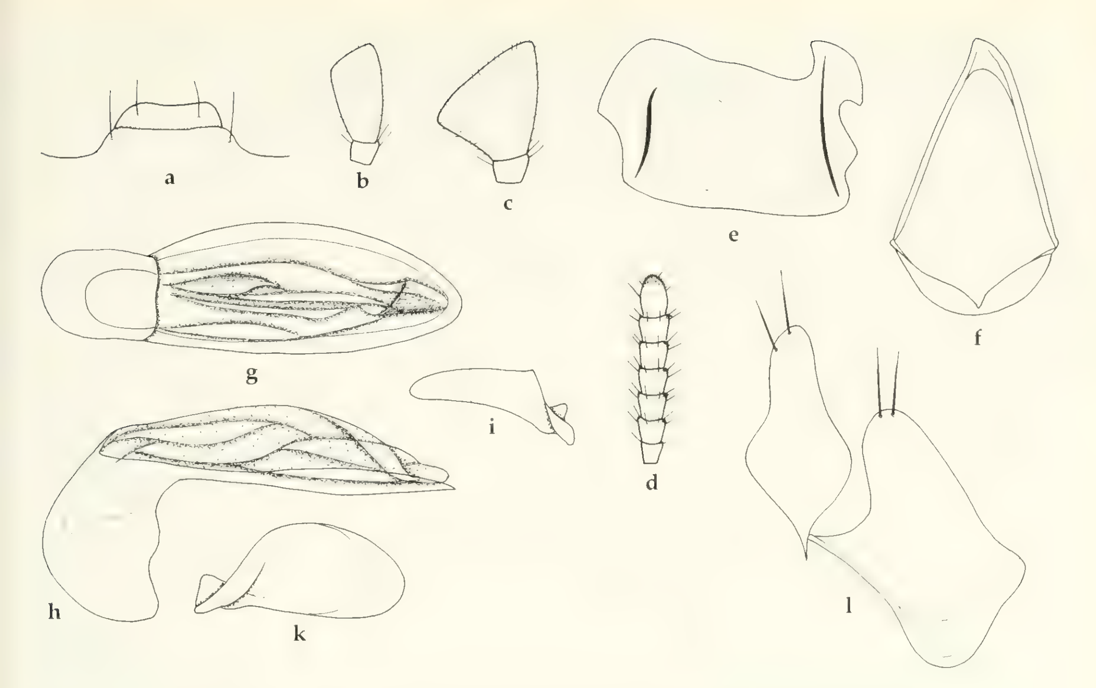
F. E. Wilson, F. E. Wilson Coll., det. *dytiscoides* (NMV); 1♂, *Adelotopus diticides* (sic!) Goulburn Riv. (OUM) 1♀, Bogan River, XI.1935, J. Armstrong (AMS); 1♂, Newcastle I.1951, J. Sedlacek (CSB); 1♂, Up. Hunter Riv. Valley 20.XI.69, Collr. J d'Apice 5122, *Cainogenion ipsoides* (Westwood) [Series det. by A. Walford-Huggins] (CMP-WHC); 1♀, Caldwell, V. Robb, det. *dytiscoides* (AMS); 2♀♀, Gunning Gap, 17.X.66, B. P. Moore (CMC); 1♀, Bathurst 15.IV.1950, *Adelotopus dytiscoides* (CSB); 1♀, Bathurst, det. *dytiscoides* (NMV); 2 (?), Wagga (MMS); 1♀, Wahroona, H. J. C. I.15, *Adelotopus dytiscoides* Newm. Id. by T. G. Sloane, H. E. Andrewes Coll. (BMNH); 1♂, Wahroona, H. J. Carter (ANIC); 1♂, 2 mi. S. Mendooran, 4.-5.X.1970, D. K. Mc Alpine and G. A. Holloway (AMS); 1♀, Bulga 24.IX.20, WWF (ANIC); 2♀♀, Greta 1.XI.51, J. Sedlacek (CSB); 1♀, Gunnedah, 5.XI.1982, J. Doyen coll. (ANIC); 1♂, 1♀, Gunnedah 5.III.59 F. E. Wilson, F. E. Wilson Coll., det. *dytiscoides* (NMV); 1♀, *A. mastersii* Macl. Tamworth (SAMA); 1♀, Boggabri, Tamworth, 8.XI.1932, K. C. Mc Keown (AMS); 1♂, 1♀, Forest Reefs, Lea, Field Museum 1970 ex South Australian Museum (FMNH); 1♂, Forest Reefs, Lea, *Adelotopus dytiscoides* N. Victoria (QMB); 1♂, 1♀, 5602 For. Reefs, *A. mastersii* teste Lea, *Adelotopus mastersii* Macl. (SAMA); 2♂♂, *Adelotopus mastersii* Macl. Forest Reefs, G. C. Champion Coll. (BMNH); 1♂, Forest Reefs Lea, C. French's Coll., det. *mastersii* (NMV); 1♀, 50 km N. Glen Innes, 20.9.1985, leg. T. Hawkeswood (CBM); 1♀, 28 km SW of Tenterfield, 5.X.71, S. Misko (ANIC); 1♂, 1♀, 3 km NW of Tooraweehnah, 1.X.1971, S. Misko (ANIC); 1♀, Clarence River Coll. Castelnau (MCSN); 1♀, Gundagai X.1930 F. E. Wilson, F. E. Wilson Coll., *A. dytiscoides* (NMV); 1♂, Adelong, X.1930, F. E. Wilson, *Adelotopus dytiscoides* Nw. (MCZ); 1♀, Quirindi, G. E. Bryant, XI.1908, *Adelotopus dytiscoides* Newm. (FMT); 1♀, Guta, Coll. Dr. Reitter, *Adelotopus dytiscoides* Newm. Det. B. P. Moore'66 (FMT); 1♀ (?), Willington 1906 W. W. Froggatt Coll, *Adelotopus dytiscoides* Nw. (ANIC); 1♀, Blackheath, 4.XII.1946, C. Oke (NMV); 1♀, Capertree, XII.33, Deuquet Coll., det. *dytiscoides* (CAS); 1♀, Ihule (?), XI.30 G. Goudie, J. C. Goudie Collection (NMV); 1♀, Uah T. G. S. 8.X.23 (ANIC); 2♀♀, Masters, Fry Coll., det. *dytiscoides* (BMNH); 2♀♀, Lea, A. Fenyes Coll., *dytiscoides* Newm. *Adelotopus* Hope (CAS); 1♂, *Gyrinoides* Hope sec. W. Macleay, Ex Museo H. W. Bates 1892 (MNHN); 1♂, *Adelotopus dytiscoides* Newm. Carabidae (CAS); 1♀, Coll. Carl Schuchardt, det. *dytiscoides* (SMF); 1♂, Coll. v. Schönfeldt, det. *gyrinoides* (SMF); 1♀, Coll. v. Schönfeldt, *gyrinoides* Hope (SMF); 1♂, Schaufs. N. Holl., Museum Leiden *Adelotopus gyrinoides* Hope Det., *Gyrinoides* Hope (NNML); 1♀, Coll. Hacker, det. *dytiscoides* (DEIB); 1♀, T. G. S. 24 (ANIC); 1♀, 82 *Adelotopus dytiscoides* Newm. (OUM); 3♂♂, 4♀♀, Janson Acq. 1884 (MNHN); 1♂, Ex Museo L. Fairmaire 1896 (MNHN); 1♀, Edwards Coll., det. *dytiscoides* (AMNH); 1♀, 15174, det. *mastersii* (SMTD); 1♀ (MNHN); 1♀ (BMNH). – **Qld:** 1♀, Stanthorpe 5.XI.1974, J. Sedlacek coll. (CSB); 1♂, Wyberba, 1.I.37, E. Sutton, E. Sutton Coll. (QMB); 1♀, Fletcher, E. Sutton, E. Sutton Coll. (QMB); 1♀, Brisbane Coll. Castelnau, Brisbane (MCSN); 1♀, Brisbane 6.IX.30 (UQIC); 1♀, Brisbane Illidge (UQIC); 1♀, Brisbane: H. Hacker 30.X.21 (QMB); 1♂, Brisbane H. Hacker 8.IX.15 (QMB); 1♀, Brisbane. O. W. Tiegs *Adelotopus gyrinoides* Hope (QMB); 1♀, Brisbane, H. Hacker (QMB); 2♀♀, Brisbane (SAMA); 1♂, Brisbane Mc Gregor, Ditto Queensland (SAMA); 1♀, Brisbane, Ex Musaeo Mniszech, *ditiscoides* West. (MNHN); 2♀♀, Archerfield, 19.IX.1964, B. Cantrell (UQIC); 4♂♂, 1♀, Sandgate, Coll. F. Muir IX.1919 (BMH); 1♀, Belmont, 16.VI.1964, A. Terauds (UQIC); 1♀, Nudgee, Brisbane H. Hacker 8.X.23 (QMB); 1♂, 1♀, Moreton Bay, Stradbroke I., IX.1915, J. C. Bridwell Coll., det. *dytiscoides* (USNM); 1♂, 2♀♀ (?), Moreton Bay, det. *dytiscoides* (BMNH); 1♀, Moreton Bay, Bowring 63-47, det. *dytiscoides* (BMNH); 1♂ (?), 1♀, K 12228, Ipswich, det. *gyrinoides* (AMS); 1♂, Yarraman, 10.X.1979 (CSB); 1♀, Rivertree 9.X.31, E. Sutton, E. Sutton Coll. (QMB); 1♀, Milmeran S.Q., IX.50. SME, J. G. Brooks Bequest, 1976, *dytiscoides* New. (ANIC); 1♀, Millmerran SQ, I.1959, J. Macqueen, *Adelotopus dytiscides* Newman [Series det. by A. Walford-Huggins] (CMP-WHC); 1♀, Qld 19, Burnett R. 10 km n. Eidsvold, 9.XI.1990, M. Baehr (CBM); 1♀, *Adelotopus mastersii* M^c^L. Jun. Burnett River, 52 Howitt Colln. (NMV); 1♀, Gayndah, Syntype, *Adelotopus mastersii* Macl., lectotype! (ANIC-MMS); 1♀, K 12204, *Adelotopus mastersii* Macl. Gayndah, Holotype, paralectotype! (AMS); 1♀, XI.1986, Monto, J. Sedlacek lgt. (CSB); 1♂, 1♀, Dawson dist. (Barnard coll.) (MNHN); 1♀ (?), Mackenzie River, 29.I.1968, leg. G. Hangay (HNMB); 1♂ (?), Bowen A. Simson 294 (SAMA); 1♀, Fry Coll., det. *dytiscoides* (BMNH); 1♀, Janson Acq. 1884 (MNHN); 1♀, North N. Holl, Janson Acq. 1884 (MNHN), 1♀, N. Queensland, 1989 25, det. *dytiscoides* (SMTD); 1♀, N. Queensland, *Adelotopus gyrinoides*, c.151)IRSNB); 1♂, 2♀♀, det. *mastersii* (NMV); 1♀, C. French's Coll., *Adelotopus mastersii* (Macleay) (NMV); 1♀, Klages Coll. Exot. Coleopt. C. M. Acc 2275, *Adelotopus dytiscoides* Newm. (CMP). – **WA:** 1♀, Swan River Curlois 1869 (OUM); 1♀, Newcastle, Lea, *Adelotopus dytiscoides* Newm. W.Aust.: S. Aust. (SAMA); 1♀, WA 49, 33 km nnw. Raventhorpe, 13.XI.1987, M. Baehr (CBM); 1♀, *Fortnumi* Hope, *Dytiscides* Nw. = *Fortnumi* Hope (OUM); 1♂, 801 263, *ipsoides* (HNMB). – **Aus:** 1♀, Australia mer. Coll. Kirsch, det. *gyrinoides* (SMTD); 1♀, Costa orientale D. Castelnau 1867, *Adelotopus ditiscoides* (sic !) Newm. t. Putz. (MCSN); 1♀, A. Deyr. N. Holl., Museum Leiden *Adelotopus dytiscoides* Newm. Det., *fortnumi* Hope (NNML); 1♀, 480, *Adelotopus ipsoides* Wst. C. Langenhan, Sammlung O. Langenhan (SMTD); 1♀ Coll. Castelnau (MCSN); 1♀, *A. Fortnumi* Hope, Type Col: 20 2/4 (OUM); 1♂, Type Westwood, *Fortnumi* Hope, Type Col: 20 4/4 (OUM); 1♀, *Adelotopus Fortnumi* Hope, Type Col: 20 3/4 (OUM); 1♀, 43 ten, *Adelotopus Fortnumi* Hope, Type Col: 20 1/4 (OUM); 1♀, Baly (OUM); 1♀, *colymbetoides* 14.25 Muir Coll. (OUM); 1♂, 1♀, Koebele, *Adelotopus dytiscoides* Newm. det. H. Notman (USNM); 1♂, 2♀♀, Koebele, det. *dytiscoides* (USNM); 1♂, 2♀♀, Koebele, Koebele Coll. det. *mastersii, Adelotopus ? mastersii* Macleay (CAS); 1♀, CNHM 1955 Karl Brancsik Coll, ex Eduard Knirsch, *Adelotopus mastersii* Macleay, *Adelotopus dytiscoides* Newm. det. G. E. Ball (FMNH); 1♀, 1872 leg. Müller, *Adelotopus dytiscoides* Newm. det.

M. Baehr (CBM); 1♂, 1♀, Müller 1872, Alte Sammlung (SMNS); 1♂, 1♀, Alte Museums-Sammlung, *A. dytiscoides fortnumi* Hope (NHMB); 1♀, Dohrn 91, *Adelotopus dytiscoides* Newm., *dytiscoides* Cast. (NHMW); 1♂, 2♀♀, Collect. Plason, *Adelotopus gyrinoides* Hope (NHMW); 1♀, *Ipsoides*, Ex Museo L. Fairmaire 1896 (MNHN); 2♀♀, Putzeys, Coll. E. Witte, det. *dytiscoides* (SMF); 1♂, Coll. E. Witte, *decipiens* ?, det. *dytiscoides* (SMF); 1♂, Fundort ?, Coll. B. Schwarzer, *Adelotopus dytiscoides* Newm. (SMF); 1♀, Fundort ?, Coll. B. Schwarzer, det. *gyrinoides* (SMF); 1♂, 1♀, C. Strobl, Coll. B. Schwarzer, det. *gyrinoides* (SMF); 1♀, *Adelotopus dytiscoides* Newm. Coll. Schaum (DEIB); 1♀, Coll. Kraatz, det. *dytiscoides* (DEIB); 1♂, Coll. Kraatz, det. *ipsoides* (DEIB); 1♂, 1♀, det. *dytiscoides* (MNHB); 1♀, *Fortnumi* Hope, Coll. L. W. Schaufuss, det. *dytiscoides* (MNHB); 1♀, *Adelotopus gyrinoides* Hope, Strobl a 73, det. *dytiscoides* (MNHB); 1♀, *Adelotopus ipsoides* Westw. Köchl., det. *dytiscoides* (MNHB); 1♀, Pars, det. *dytiscoides* (MNHB); 1♀, 1882 I, det. *gyrinoides* (NHMW); 1♀, 1882 I, *Adelotopus mastersii*, det. *gyrinoides* (NHMW); 1♀, 801 263 (HNMB); 1♀, 737, det. *dytiscoides* (BMNH); 1♀, *Adelotopus gyrinoides* Hope, Sharp Coll., det. *dytiscoides* (BMNH); 3♂♂, 1♀, 58 124, det. *dytiscoides* (BMNH); 1♂, Fry Coll., det. *dytiscoides* (BMNH); 1♂, 13524, Austr.`, Fry Coll., det. *dytiscoides* (BMNH); 2♀♀, Bowring 63.47*, det. *dytiscoides* (BMNH); 2♀♀, Blackburn, Sharp Coll., det. *dytiscoides* (BMNH); 2♀♀, Blackburn, G. C. Champion Coll. (BMNH); 1♂, 2♀♀, Edwards, det. *dytiscoides* (MCZ); 3♀♀, W. Edwards, *dytiscides* Newm. (MCZ); 1♀, W. Edwards, *Adelotopus dytiscoides* (MCZ); 1♂, 1♀, *Adelotopus dytiscoides* Newm. 554 (MCZ); 1♀, Coll. French (ANIC); 1♂, Simson's Coll. 294-442 (SAMA); 1♂, Blackb's Coll., *mastersii* Macl. (SAMA); 2♂♂, 2♀♀, Coll. Schaum, det. *dytiscoides* (DEIB); 1♀, Coll. Schaum, *Adelotopus gyrinoides*, det. *dytiscoides* (DEIB); 1♀, *fortnumi* Hope, Coll. Schaum, det. *dytiscoides* (DEIB); 1♀, 13524, 6.660 Muir Coll. (OUM); 1♀, 090 *Adelotopus* Hope (OUM); 1♀, *gyrinoides* Hope quest. W. Macl., Ex Museo Van Lansberge (MNHN); 1♀, Ex Musaeo E. Steinheil, det. *dytiscoides* Newman (MNHN); 1♂, *Adelotopus dytiscoides* Newm. dét. P. Dupuis, *Adelotopus dytiscoides* Newm. (IRSNB); 1♀, *Adelotopus gyrinoides* Hope dét. P. Dupuis, *Adelotopus gyrinoides* Hope (IRSNB); 1♀, Dohrn, *Adelotopus dytiscoides* Newm. dét..., *Adelotopus dytiscoides* Newm. Austral. (IRSNB); 1♀, Austral. *Adelotopus gyrinoides* Hope dét... (IRSNB); 1♀, *A. ditiscoides* Nwm. N. Holl (?), Soc. Ent. Belg, Coll. PUTZEYS, *Adelotopus dytiscoides* Newm. dét. J. Putzeys (IRSNB); 1♂ (OUM). – **?:** 2♀♀, Inglewood 11.XII.20 (NMV); 4♀♀, Oakleigh (NMV); 1♀, Elmore 11.III.10 (NMV); 1♀, Whittlean (?), J. A. K. 11XI.08 (NMV); 1♀, Crayton 26.IV.17 (NMV); 1♀, Champion Bay Douboulay (OUM); 1♀, W. Dist. Kershaw XI.01, Griffith Coll. Id. by A. M. Lea (SAMA); 1♂, N. Mecklenburg, 31.?.?. Tepper, *dytiscoides* Newm. Id. by A. M. Lea (SAMA); 1♀, Oakleigh, *A. dytiscoides* (NMV); 1♀, Morcatta, *dytiscoides* Newman (OUM); 1♀, Maitland 29.XI.57, *Adelotophus* (sic!) sp., det. *dytiscoides* (AMNH); 2♀♀, Morcatta (OUM); 1♂, *Adelotopus* sp. Taraittah K 12399 (AMS); 1♀, Petersham 128233 (AMS); 1 (?), E. Plains XI.93 (ANIC); 1♀, T...don 16.X.86 (SAMA); 1♂, Type, *Adelotopus Dytiscides* Newman (BMNH); 2♀♀, K 12228, det. *gyrinoides* (AMS); 1♂, *Adelotopus dytiscoides* Rev. Zool. 1853, *Adelotopus fortnumi* (OUM); 1♂, 2♀♀, Bridwell Collection, det. *dytiscoides* (USNM); 1♀, 1083, det. *dytiscoides* (MNHB); 2♀♀, 41066, det. *dytiscoides* (MNHB); 1♂, Type *Adelotopus Dytiscoides* Newm. (BMNH); 1♂, 1♀, Sharp Coll., det. *dytiscoides* (BMNH); 2♂♂, 34, *Adelotopus gyrinoides* Hope (UQIC); 1♂, *A. gyrinoides* Hope (ZSM); 2♀♀, det. *dytiscoides* (MNHB); 1♂, *Ad. dytiscoides* 20.XI.92 (ANIC); 1♂, 1♀, 125, 9, 16 Howitt Colln., det. *dytiscoides* (NMV); 1♀, Janson Acq. 1884 (MNHN); 2♂♂, 1♀, Collection E. Rousseau, *Adelotopus dytiscoides* Newm. dét. E. Rousseau (IRSNB); 1♂, Collection E. Rousseau, *Adelotopus gyrinoides* Hope dét. E. Rousseau (IRSNB); 1♂, 61, Soc. Ent. Belg. Coll. PUTZEYS, *Adelotopus dytiscoides* Newm. dét. J. Putzeys (IRSNB); 1♀, 797, *Silphomorpha dytiscoides* Newm. dét..., 797 *Silphomorpha dytiscoides* Chaud. (IRSNB); 1♂, Lea Dup. (SAMA); 1♀, Moc (?) (OUM); 1♂, 1♀, W (CSB); 1♀ (UQIC); 1♀ (ANIC); 1♀ (SAMA); 1♂, 4♀♀ (OUM); 1♀, Coll. Schwarzer, det. *gyrinoides* (SMF); 1♀, ac. 23246, *mastersii* Mcl. (AMNH); 1♂, 2♀♀, L 540 (NMV); 2♂♂, 13♀♀, 1-7, 20-15, 17, 18, Howitt Colln., det. *dytiscoides* (NMV); 4♂♂, 7♀♀, Gunbower X.04 J. A. Kershaw (NMV); 3♀♀, 1961 (NMV); 2♀♀, Nat. Mus. Victoria, From Mr. Duboulay 2.IV.11 (NMV); 1♀, C. French's Coll. (NMV); 4♂♂, 2♀♀, Ex Musaeo Chaudoir, det. *dytiscoides* Newman (MNHN); 1♀, Ex Musaeo Mniszech, det. *dytiscoides* Newman (MNHN); 1♂, 1♀ (NMV).

Adelotopus ulrichi, spec. nov.

Figs 101, 290, 439, 440, 604

Types. Holotype: ♂, Australien, Qld 27, Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd., 12.11.1990, M. Baehr (ANIC). – Paratypes: 8♂♂, 4♀♀, same data (CBM, NMV, ZSM); 1♂, Brisbane H. Hacker 13.12.11, *Adelotopus dytiscoides* Newm. det. Sloane (QMB); 1♀, Ipswich S.Q. 2/67 JK, M.54, J. G. Brooks Bequest 1976 (ANIC); 1♂, Greenbank Qld. 13.XII.62 G. Monteith (UQIC); 1♂, Maryborough Queensland (SAMA); 1♀, Maryborough Queensland E. W. Fischer (SAMA); 1♀, Queensland, Rockhampton XI 1986, J. Sedlacek Collector (CSB); 4♂♂, 1♀, Australia: Qld Rockhampton 26-27.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♀, Australia, Qld, Mackenzie River, 29.I.1968, leg. G. Hangay (HNMB); 1♀, Edungalba, CQ 9.I.1964, E. E. Adams, 1580, *Adelotopus dytiscides* Newman [Series det. by A. Walford-Huggins] (CMP-WHC); 1♂, N. Holl P. Denison Dämel (MNHB); 1♂, Buckley (?) Qld 6.12.26, Australia, G. E. Clarke Collection 1957 (BMNH); 1♂, N. Queensland, *Mastersii* Macl. sec. description, Ex Museo H. W. Bates 1892 (MNHN); 1♀, Australie Queensland Salle, Ex Musaeo Chaudoir (MNHN); 1♀, N. Holl. Q'land Janson Acq. 1884 (MNHN); 1♂, Port Darwin, N. Territory (MMS); 1♀, Barrimore 16.-1-44, Brock & Sutton, E. Sutton Coll. 1964 (QMB); 1♂, K 12005 *A. politus* (AMS).



Figs 101a-l. *Adelotopus ulrichi*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Diagnosis. Large, moderately wide, moderately depressed, uniformly black species with distinctly concave base of pronotum and rasp-like and horseshoe-shaped punctures marking the elytral striae. Distinguished from relative *A. latior*, spec. nov. by pronotum narrower and more convex, elytra longer and duller, and elytral striae visible at most in apical half.

Description

Measurements. Length: 7.5-9.1 mm. Ratios. Width/length of pronotum: 1.78-1.86; width base/apex of pronotum: 1.69-1.85; width pronotum/head: 1.77-1.93; length/width of elytra: 1.36-1.43; length elytra/pronotum: 2.51-2.63.

Colour. Black, lateral borders of pronotum and elytra sometimes slightly reddish-piceous translucent. Lower surface, antennae, mouthparts, and legs dark reddish-piceous, lower surface of head almost black.

Head (Figs 101a-d, 290). Short and wide, rather depressed. Anterior border feebly convex, lateral border rather angular. Clypeal suture shallow, in middle usually absent, semicircular. Labrum comparatively large, apex slightly concave. Antennal groove laterally strongly bordered, latero-posteriorly with convex, though barely carinate area. Mental tooth triangular, rather wide, at apex slightly rounded off. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically rounded, ventrally with feeble keel, at border with c. 8 elongate setae and additional dense pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus narrow, apex feebly widened, barely securiform. Terminal palpomere of labial palpus large, very widened, wider than long, markedly securiform. Antenna moderately elongate, 8th-9th antennomeres slightly wider than long. Microreticulation dense and distinct, puncturation rather dense, though more or less difficult to detect, surface with a shallow sulcus medially of eyes and usually with some fine longitudinal strioles on frons, impilose, markedly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi sparsely setose, gula almost smooth.

Pronotum (Fig. 290). Rather wide, moderately convex, base clearly less than 2 × as wide as apex. Apical angles produced, acute, attaining almost middle of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest near basal angles, barely or not at all bordered, but anteriorly more or less widely explanate. Basal angles rectangular or

slightly obtuse, at apex barely rounded off, base distinctly concave, though in middle feebly produced, not bordered. Microreticulation dense and distinct, very fine, almost isodiametric, puncturation fine, difficult to detect, surface with some fine, irregular strioles, impilose, dull.

Elytra (Figs 290, 439, 440). Moderately elongate and convex, in basal two fifth rather parallel, then gently narrowed. Apex slightly oblique, truncature feebly concave, dehiscent at suture. Shoulders obtuse, basal margin oblique, with a row of many short setae. Basal border line complete, well developed, meeting at suture. Marginal channel rather wide, slightly widened in basal fourth, completely visible from above. Lateral border asetose or with but 1-2 short setae just behind shoulders. Series of umbilical pores consisting of 6 pores behind shoulder and 1 pore or, rarely, 2 pores at apical third. Setae short. Striae basally reduced, indicated only by irregular rows of extremely fine strioles, but sutural stria posterioly slightly impresed, and internal striae visible in apical third as rows of corse, rasp-like punctures, becoming even larger towards apex. These punctures laterally rather confused. Microreticulation dense and distinct, basally no puncturation visible. Surface impilose, markedly dull.

Lower surface. Prosternal process rather elongate, straight, moderately depressed, apex rectangular, shortly setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna with 3-6 setae each side, sternum VI in both sexes with many (c. 14-24), rather short setae at or near apical border. Whole lower surface rather densely punctate and pilose.

Legs. Elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur comparatively shallow, anterior plate only at apex distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 101e-k). Genital ring rather asymmetric, laterally slightly convex. Sternum VII apically deeply excised, basally slightly bisinuateor straight, laterally short. Aedeagus moderately elongate, wide, moderately depressed, rather symmetric, lower surface almost straight. Lateral border wide throughout. Apex wide, rounded off. Internal sac rather simple. Right paramere elongate, with obtuse apex. Left paramere much larger, convex, with widely rounded or somewhat obtuse apex.

♀ genitalia (Fig. 101l). Stylomere 2 triangular, apically rather narrow, with 2-3 subapical setae. Lateral plate rather elongate, with 2-3 apical setae.

Variation. Only some variation noted in relative shape of pronotum the lateral explanations of which may be rather narrow, distinctness of puncturation of head and pronotum, and degree of puncturation of elytra. Otherwise a rather homogeneous species.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Not specified. A series collected by me under bark of River Gum at the border of a dry creek in open eucalypt woodland. So far collected from November to February only.

Distribution (Fig. 604). Eastern Queensland from Brisbane to about Townsville, perhaps also northern part of Northern Teritory.

Material examined (34). Only the type series.

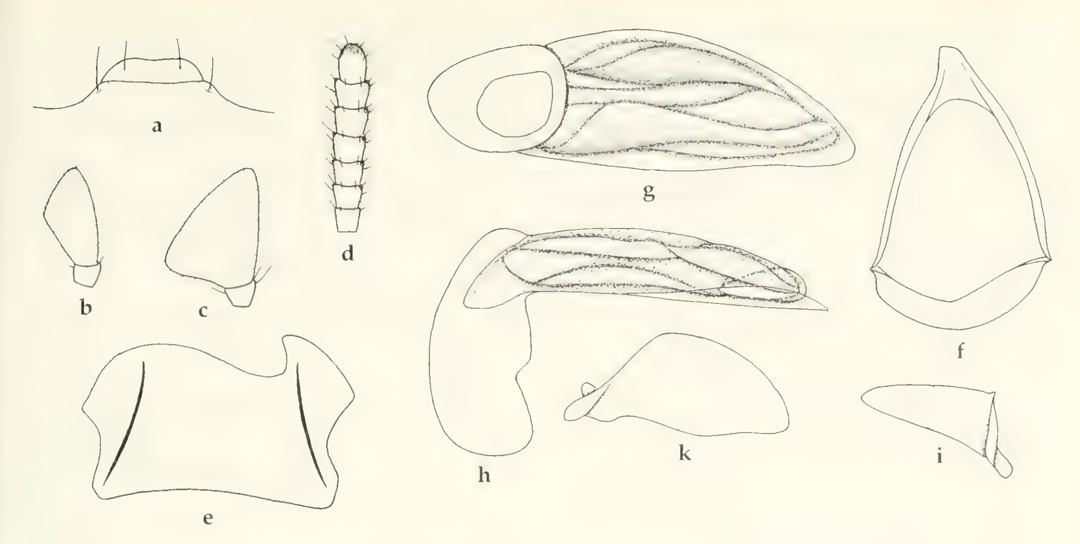
Etymology. Named in honour of my little son, who helped me collecting mainly by not walking too far into tall grass and by not getting a sunstroke in extremely hot eastern Queensland.

Adelotopus latior, spec. nov.

Figs 102, 291, 441, 442, 604

Types. Holotype: ♂, 17.58S, 144.51E, 43 km SW of Mt. Garnet, Qld. 8 Dec.1985 J. Balderson (ANIC). – Paratypes: 1♂, Australien, Qld., 3 km w. Atherton 29.12.1981, M. Baehr (CBM); 1♂, Mareeba Dodd 08 (ANIC); 1♂, Mareeba 1/49, *gyrinoides* Hope 1584, J. G. Brooks Bequest 1976 (ANIC); 1♂, Mareeba NQ 2/53 GB, *Adelotopus hydrobioides* Westw. det. B. P. Moore '69, J. G. Brooks Bequest 1976 (ANIC); 1♂ (defect), Chillagoe, Exp. Dodd, 3.08 (ANIC).

Diagnosis. Large, wide, rather depressed, uniformly black species with distinctly concave base of pronotum, and rasp-like punctures marking the elytral striae. Distinguished from most closely related species *A. ulrichi*, spec. nov. by pronotum wider and more depressed, elytra shorter and less dull, and elytral striae visible at least from basal third.



Figs 102a-k. *Adelotopus latior*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Description

Measurements. Length: 7.0-8.2 mm. Ratios. Width/length of pronotum: 1.89-2.05; width base/apex of pronotum: 1.83-1.90; width pronotum/head: 1.90-1.99; length/width of elytra: 1.23-1.25; length elytra/pronotum: 2.27-2.55.

Colour. Black, lateral borders of pronotum and elytra faintly reddish-piceous translucent. Lower surface, antennae, mouthparts, and legs dark reddish-piceous, lower surface of head dark piceous.

Head (Figs 102a-d, 291). Short and wide, rather depressed. Anterior border feebly convex, lateral border rather angular. Clypeal suture shallow, in middle more or less reduced, semicircular. Labrum comparatively large, apex slightly concave. Antennal groove laterally strongly bordered, latero-posteriorly with convex, though barely carinate area. Mental tooth triangular, rather wide, at apex slightly rounded off. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically rounded, ventrally with feeble keel, at border with c. 8 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, apex feebly widened, barely securiform. Terminal palpomere of labial palpus large, very widened, wider than long, markedly securiform. Antenna moderately elongate, 8th-9th antennomeres distinctly wider than long. Microreticulation dense and distinct, puncturation rather dense, fairly well seen, surface with a shallow sulcus medially of eyes and usually with some fine longitudinal strioles on frons, impilose, dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi sparsely setose, gula almost smooth.

Pronotum (Fig. 291). Wide, moderately convex, base almost 2 × as wide as apex. Apical angles produced, acute, attaining almost middle of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest near basal angles, barely or not at all bordered, but anteriorly rather widely explanate. Basal angles rectangular or slightly obtuse, at apex barely rounded off, base perceptibly concave, sometimes in middle feebly produced, not bordered. Microreticulation dense and distinct, very fine, almost isodiametric, puncturation minute, though easily detected under high magnification, surface with some fine, irregular strioles, impilose, moderately dull.

Elytra (Figs 291, 441, 442). Rather short and wide, moderately convex, in basal two fifth rather parallel, but in middle faintly widened, then gently narrowed. Apex slightly oblique, truncature feebly concave, dehiscent at suture. Shoulders obtuse, basal margin oblique, with a row of many short setae. Marginal channel rather wide, slightly widened in basal fourth, completely visible from above. Basal border complete, well developed, meeting at suture. Lateral border asetose or with but 1-2 short setae just behind shoulders. Series of umbilical pores consisting of 6 pores behind shoulder and 1 pore or,

rarely, 2 pores at apical third. Setae short. Striae near base reduced, indicated only by irregular rows of extremely fine strioles, sutural stria posterioly slightly impressed. All striae visible from at least basal third as rows of corse, rasp-like punctures, becoming larger towards apex. These punctures laterally rather confused. Microreticulation dense and very fine, distinct, basally no puncturation visible. Surface impilose, but moderately dull.

Lower surface. Prosternal process rather elongate, straight, moderately depressed, apex rectangular, shortly setose. Metepisternum elongate, slightly <2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna with 3-6 setae each side, sternum VI with many (c. 14-24) short setae at or near apical border. Lower surface rather sparsely punctate and pilose.

Legs. Elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur comparatively shallow, anterior plate only at apex distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 102e-k). Genital ring rather asymmetric, laterally slightly convex. Sternum VII apically deeply excised, basally slightly bisinuate or straight, laterally short. Aedeagus moderately elongate, wide, moderately depressed, rather symmetric, lower surface almost straight. Lateral border wide throughout. Apex wide, rounded off. Internal sac rather simple. Right paramere elongate, with obtuse apex. Left paramere much larger, convex, with widely rounded apex.

♀ genitalia. Unknown.

Variation. Little variation noted due to limited material.

Vivipary. Not confirmed due to lack of females.

Habits. Generally not specified. One specimen captured by me under bark of gum-type eucalypt. So far collected from December to March.

Distribution (Fig. 604). Western slope of Atherton Tableland and western adjacent country.

Material examined (6). Only the type series.

Etymology. The name refers to the shorter and wider shape in comparison to the related *A. ulrichi*.

Adelotopus apicalis Macleay, 1864
Figs 103, 292, 443, 444, 605, 655

Adelotopus apicalis Macleay, 1864, p.113; Blackburn 1901a, p. 19; 1901b, p. 113; Notman 1925, p. 7, 10, 28; Csiki 1933, p. 1634; Darlington 1968, p. 241; Moore et al. 1987, p. 49.

Types. Lectotype (by present designation): ♂, Pt. Denison, Syntype, *Adelotopus apicalis* Macl. Port Denison (ANIC-MMS). – Paralectotypes: 2♀♀, same data (ANIC-MMS); 1♀, Pt. Denison, Syntype (ANIC-MMS).

Type locality. "Pt. Denison", Queensland.

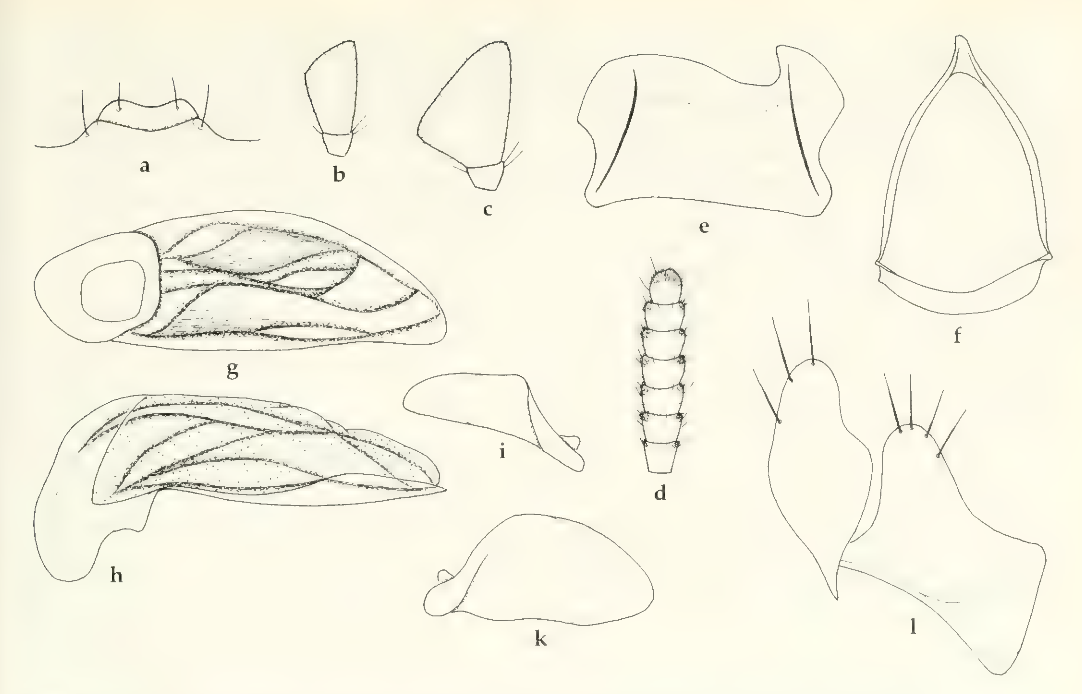
Diagnosis. Large, wide, rather depressed, black species with reddish elytral apex, bright red apex of abdomen, and usually perceptibly concave base of pronotum. Further distinguished from relative species by elytra glossy, elytral striae punctate and visible from apical half, but punctures barely rasp-like.

Description

Measurements. Length: 6.1-8.5 mm. Ratios. Width/length of pronotum: 1.98-2.11; width base/apex of pronotum: 1.80-1.88; width pronotum/head: 1.84-1.90; length/width of elytra: 1.22-1.34; length elytra/pronotum: 2.47-2.78.

Colour. Glossy black, apex of elytra usually more or less distinctly reddish, though sometimes not even perceptibly lighter than rest of elytra. Lower surface of head and thorax dark piceous to almost black, of abdomen reddish-piceous, posteriorly usually red. Mouthparts, antennae, and legs reddish-piceous or even red.

Head (Figs 103a-d, 292). Short and wide, rather depressed. Anterior border feebly convex, lateral border feebly obtuse. Clypeal suture shallow, in middle more or less reduced, semicircular. Labrum comparatively wide, apex gently concave. Antennal groove laterally strongly bordered, latero-



Figs 103a-l. *Adelotopus apicalis* Macleay. Details of head and genitalia. For legends see fig. 100.

posteriorly with almost depressed area. Mental tooth triangular, short, apex acute. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with feeble keel, at border with c. 8 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately narrow, apex slightly widened, weakly securiform. Terminal palpomere of labial palpus large, very widened, wider than long, markedly securiform. Antenna rather short, 8th-9th antennomeres markedly wider than long. Microreticulation very fine, dense, puncturation minute, difficult to see, surface with a shallow sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi sparsely setose, gula almost impilose.

Pronotum (Fig. 292). Wide, moderately convex, base almost 2 × as wide as apex. Apical angles produced, rather acute, attaining posterior third of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest at or near basal angles, barely or not at all bordered, usually not much explanate. Basal angles rectangular or slightly obtuse, at apex barely rounded off, base usually perceptibly concave, sometimes in middle feebly produced, not bordered. Microreticulation very fine, almost isodiametric, puncturation minute, more or less easily detected under high magnification, surface with some fine, irregular strioles, impilose, rather glossy.

Elytra (Figs 292, 443, 444). Rather short and wide, moderately convex, in basal two fifth almost parallel, then gently narrowed. Apex slightly oblique, apical angles widely rounded, truncature feebly concave, dehiscent at suture. Shoulders obtuse, basal margin oblique, with a row of many short setae. Marginal channel narrow, completely visible from above. Basal border complete, well developed, meeting at suture. Lateral border asetose. Series of umbilical pores consisting of 6 (rarely unilaterally 7) pores behind shoulder and 1 pore behind middle or at apical third. Setae very short. Striae in basal half absent, only vaguely indicated by irregular rows of extremely fine strioles, sutural stria posterioly slightly impressed, suture raised. All striae visible from slightly behind middle as rows of basally fine, not or but faintly rasp-like punctures, becoming larger towards apex. In basal half intervals also with scattered, extremely minute punctures. Microreticulation very fine, superficial, much less distinct than on fore body, consisting of slightly transverse meshes. Surface impilose, glossy.

Lower surface. Prosternal process moderately elongate, wide, straight, rather depressed, apex widely rounded, shortly setose. Metepisternum moderately elongate, slightly <2 × as long as wide, apically constricted and hollowed. Abdominal sterna with 1-2 setae each side, sternum VI in both sexes moderately punctate and shortly setose, but without more distinct setae at apical border. Lower surface rather sparsely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur moderately deep, anterior plate in anterior half distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 103e-k). Genital ring rather asymmetric, laterally slightly convex. Sternum VII apically deeply excised, basally slightly bisinuate or straight, laterally short. Aedeagus moderately elongate, wide, moderately depressed, rather symmetric, lower surface gently convex. Lateral border only in apical half wide. Apex wide, rounded off. Internal sac rather simple. Right paramere moderately elongate, with obtuse apex. Left paramere much larger, convex, with widely rounded apex.

♀ genitalia (Fig. 103l). Stylomere 2 widely triangular, apically rather wide, with 2-3 subapical setae. Lateral plate rather elongate, with 3-4 apical setae.

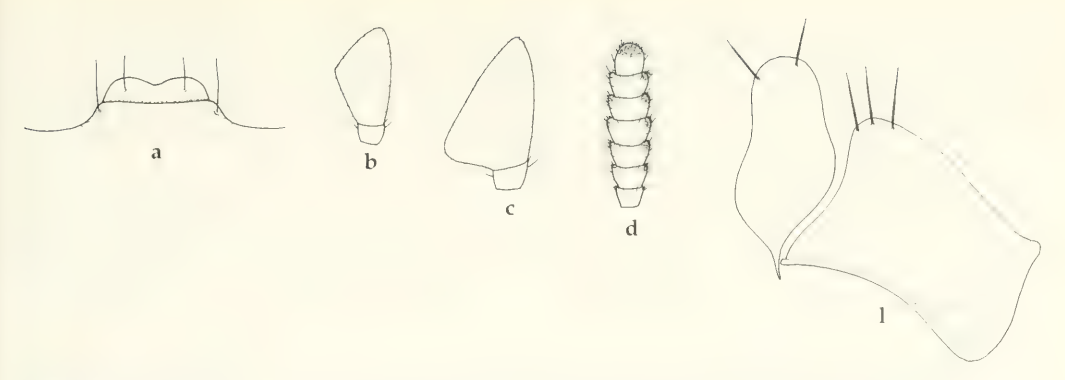
Variation. Some variation noted in relative shape of pronotum and elytra, in degree of reddish colour on apex of elytra, and in degree of elytral striation. There are some specimens, however, that are barely reddish on elytra and abdomen, and some specimens posessing very wide pronota with fairly marked lateral sulcus and barely sinuate basal margin that come all from extreme northern Cape York Peninsula and represent perhaps a geographical variation that is, however, from my view not of much taxonomical value. There is a single specimen having the head and pronotum extensively microreticulate and shagreened by many coarse wrinkles. Because it is in other ways similar to other specimens, I do not believe that it represents more than an abnormal variant.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Little specified. Specimens were collected by me under bark of river gums and other gum-type eucalypts. The large series from Granite Gorge near Mareeba was found in immediate vicinity of a nest of *Camponotus dorycus* (Sm.). Specimens collected by P. Meyer were found "under bark of bloodwood-type eucalypt" and "under bark of box-type eucalypt". Dated specimens were captured from September to February and in May and July, though comparatively few specimens are dated, and, apart from those recently collected by me, most are from captures made by F. P. Dodd in October 1902.

Distribution (Figs 605, 655). Northeastern Queensland from about Rockhampton to tip of Cape York Peninsula, apparently also New Guinea. An old record from Tasmania is highly doubtful.

Material examined (89). **Tas:** 1♂, 294, Tasmania, A. Simson, *Adelotopus* sp., *Adelotopus hydrobioides* Westw. dét..., *hydrobioides* Westw. suivant Simson (IRSNB). – **Qld:** 1♀, Rockhampton, Coll. C. Felsche, det. *gyrinoides* (SMTD); 1♀, Dipperu M. E. Q., XI.1971, B. Baldwin (QMB); 1♀, Port Bowen 75.12, *Adelotopus hydroporoides* Westw. Id. By T. G, Sloane (BMNH); 1♀, Bowen A. Simson 294 4127, *Silphomorpha hydrobioides* By Simson's number (SAMA); 1♀, Bowen, Janson Acq. 1884 (MNHN); 1♂, 2♀♀, Pt. Denison, Syntype, *Adelotopus apicalis* Macl. Port Denison (ANIC-MMS); 1♀, Pt. Denison, Syntype (ANIC-MMS); 1♀, *Adelotopus apicalis* M. L. Port Denison, 48, Howitt Colln (NMV); 1♀, P^t^. Denison, Ex Musaeo Mniszech, *apicalis M* Leay, det. *haemorrhoidalis* Westwood (MNHN); 1♀, Port Denison Coll. Castelnau, *apicalis* M. L.^s^ j^or^.Port Denison, *apicalis* ? Macl. (MCSN); 2♂♂, Port Denison Coll. Castelnau, det. *apicalis* (MCSN); 2♀♀, Townsville 14.X.02 F. P. Dodd (ANIC); 2 (?), Townsville X.02 F. P. Dodd, *Adelotopus hydroporoides* Westw. = *apicalis* Macl. Id. by T. G. Sloane (ANIC); 1♂, 1, Townsville X.02 F. P. Dodd, Griff. 2562, *A. apicalis* Macl. comp. type 6.VII.20, *Adelotopus hydrobioides* West. Id. by T. G. Sloane (SAMA); 2♂♂, Townsville, G. Bryant Coll. 1919, det. *hydrobioides* (BMNH); 2♂♂, Townsville X.02 F. P. Dodd, Ex Coll. T. Sloane, *Adelotopus hydrobioides* West. ? Id. by T. G. Sloane, H. E. Andrewes Coll. 1945 (BMNH); 1♀, Townsville 14.X.02 F. P. Dodd, G. Bryant Coll. 1919, det. *hydrobioides* (BMNH); 1♀, Townsville X.02 F. P. Dodd, det. *hydrobioides* (BMNH); 1♂, Townsville 29.IX.02 F. P. Dodd, C. Bryant Coll. 1919, det. *hydroporoides* (BMNH); 1♂, 7286, Townsville 3.X.02 F. P. Dodd (SAMA); 1♂, Townsville Oct. 02 F. P. Dodd, *Adelotopus hydrobioides* West. = *apicalis* Macl. Id. by T. G. Sloane (SAMA); 1♂, 1♀, Townsville (BMNH); 2♂♂, Tville 2562, Townsville 2.XI.02 F. P. Dodd, Griffith Coll. Id. by A. M. Lea (SAMA); 1♀, Hervey Range Rd., 5.8 km W Bohle Rd., W Townsville 29.V.1987, P. A. Meyer coll. (CBM); 1♀, Ayr, N. Q., received from W. du Boulay, *Adelotopus apicalis* Macl. (NMV); 3♂♂, 3♀♀, Qld 93/67, Einasleigh R. b. Carpentaria Downs, 12.-13.6.1993, M. Baehr (CBM); 1♀, Qld 93/64, Einasleigh R. 2 km e. Einasleigh, 11.-12.6.1993, M. Baehr (CBM); 1♀, Cairns dist. F. P. Dodd, *Adelotopus hydrobioides* West. = *apicalis* Macl. Id. by T. G. Sloane (SAMA); 1♀, Mulgrave Res. 405. *Adelotopus hydrobioides*



Figs 104a-d, l. *Adelotopus zborowskii*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Westw. Id. by T. G. Sloane Coll. Hacker (DEIB); 1♂, 1♀, Kuranda, Griffith Coll. Id. by A. M. Lea, *Silphomorpha*, 2562 (SAMA); 2♀♀, Kuranda, Queensland Dodd & Griff. *Adelotopus hydrobioides* West. Id. by T. G. Sloane (SAMA); 1♀, Mareeba, XII.52, J. G. Brooks, *Adel. gyrinoides* Hope (MCZ); 15♂♂, 3♀♀, Qld 93/76, Granite Gorge, 15 km wsw. Mareeba, 15.6.1993, M. Baehr (CBM, ZSM); 1♂, Qld 93/51, Emu Ck., 5 km e. Petford, 8.6.1993, M. Baehr (CBM); 1♀, 40 Mile Scrub area, SW Ravenshoe, 14.V.1987, P. A. Meyer coll. (CBM); 1♀, N. of Mareeba II.58 Darlingtons (MCZ); 1♂, 18 km N. Mareeba, 2.I.1989, H. & A. Howden (Ottawa); 1♂, 1♀, Qld 93/4, Mt. Molloy, 22.5.1993, M. Baehr (CBM); 1♂, Station Ck. NQ, 10 m S. Mt. Carbine, 20.XII.1971, A. & M. Walford-Huggins, 6128 (CMP-WHC); 1♀, Einasleigh River, 33 km w. Mt. Surprise, 4.1996, leg. A. Floren (CBM); 2♀♀, Toolkoor N. Queensland (NMHB); 1♀, Endeavour R., C. French's Coll., det. *A. apicalis* (NMV); 1♀, Somerset, C. T. Mc Namara (SAMA); 1♂, Australia Somerset I.75 L. M. D'Albertis, *apicalis* Macl. det. Gestro (MCSN); 1♀, 22/1 Bamaga N. Q. Jan. 1984, J. H. Sedlacek (CSB); 1♀, Cape York, Lea has not, *Adelotopus* Cape York (QMB); 2♀♀, Cape York (MMS); 1♂, E. Weiske N. Queensland, 15054, det. *gyrinoides* (SMTD); 1♂, 1♀, Simson, Fry Coll. 1905, det. *hydrobioides* (BMNH). – **NG:** 1♀, Redscar Bay, Brit. N. G. (MNHN); 1♀, K. Plat. N. N. G. 16.VII.94, Should be *A. hygrobioides* from des 5.XII.02 Return (ANIC). – **?:** 1♂, D. Sharp Coll. 1932 (BMNH).

Adelotopus zborowskii, spec. nov.

Figs 104, 293, 445, 605

Types. Holotype: ♀, 15.39S 144.31E Split Rock QLD 18 Feb-25 Apr 1993 Malaise Trap P. Zborowski (QMB). – Paratypes: 1♀, 15.39S 144.31E Split Rock QLD 16 Sep-19 Oct 1993 Flight Intercept Trap P. Zborowski & D. Rentz (DPIM); 1♀, Hann R. via Laura, n. Qld Dec. 93-Jan. 94 P. Zborowski Malaise Trap (CBM).

Diagnosis. Medium sized, fairly wide, moderately depressed, black species with more or less distinctly reddish translucent lateral margins of pronotum and elytra. Further distinguished from relative species by lesser size, barely marked and only in apical half finely punctate elytral striae, fine and not silky microreticulation, and absence of elytral punctures.

Description

Measurements. Length: 5.55-6.40 mm. Ratios. Width/length of pronotum: 1.76-1.80; width base/apex of pronotum: 1.60-1.67; width pronotum/head: 1.66-1.75; length/width of elytra: 1.40-1.42; length elytra/pronotum: 2.51-2.54.

Colour. Black, lateral margins of pronotum and elytra more or less distinctly reddish translucent. Lower surface of head and thorax black, of abdomen reddish-piceous, posteriorly lighter. Mouthparts, antennae, and femora reddish-piceous, tibiae and tarsi blackish.

Head (Figs 104a-d, 293). Short and wide, fairly convex. Anterior border feebly convex, lateral angle obtuse, slightly projecting. Clypeal suture shallow, indistinct, widely interrupted in middle, of completely absent. Labrum comparatively wide, apex gently concave. Antennal groove laterally barely bordered, latero-posteriorly with convex, slightly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 8 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate,

moderately widened, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation fine, dense, slightly superficial, puncturation almost invisible, surface with a shallow sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula apparently asetose.

Pronotum (Fig. 293). Moderately wide, moderately convex, base <1.7 × as wide as apex. Apical angles moderately produced, rather acute, attaining posterior third to half of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides evenly curved, widest near basal angles, very finely, inconspicuously bordered, moderately explanate, but less so than the other species of this group. Basal angles almost rectangular, at apex barely rounded off, base faintly concave or almost straight, not bordered. Microreticulation fine and somewhat superficial, almost isodiametric, puncturation extremely fine, almost invisible, surface with some fine, irregular strioles, impilose, moderately glossy.

Elytra (Figs 293, 445). Comparatively elongate, moderately convex, in basal three fourth almost parallel, then gently narrowed. Apex slightly oblique, apical angles widely rounded, truncature feebly concave. Shoulders obtuse, basal margin oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border almost complete, well developed, ending close to suture. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 pore in middle. Setae very short. Striae in apical half more or less distinctly indicated as rows of fine punctures, basally absent, sutural stria invisible, suture apically faintly raised. Puncturation almost invisible. Microreticulation fine, somewhat superficial, isodiametric, slightly coarser than on fore body. Surface impilose, moderately glossy.

Lower surface. Prosternal process moderately elongate, rather wide, straight, rather depressed, apex straight, shortly setose. Metepisternum moderately elongate, c. 1.5 × as long as wide, posteriorly constricted and deeply hollowed. Abdominal sterna with 1 seta each side, sternum VI without longer setae at apical border. Lower surface rather sparsely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur moderately deep, anterior plate only in apical half distinctly overlapping the groove, posteriorly border of groove fairly sharp. Metatibia rather narrow, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia. (Fig. 104l). Stylomere rather wide, apically slightly narrowed, with 2-3 apical setae. Lateral plate rather elongate, with 2-3 apical setae.

Variation. Some variation noted in size and relative with of pronotum.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown, all specimens collected in "Malaise trap" or "flight intercept trap". Thus far collected during the periods of February-April, September-October, and December-January.

Distribution (Fig. 605). Lower Cape York Peninsula, northeastern Queensland.

Material examined (3). Only the type series.

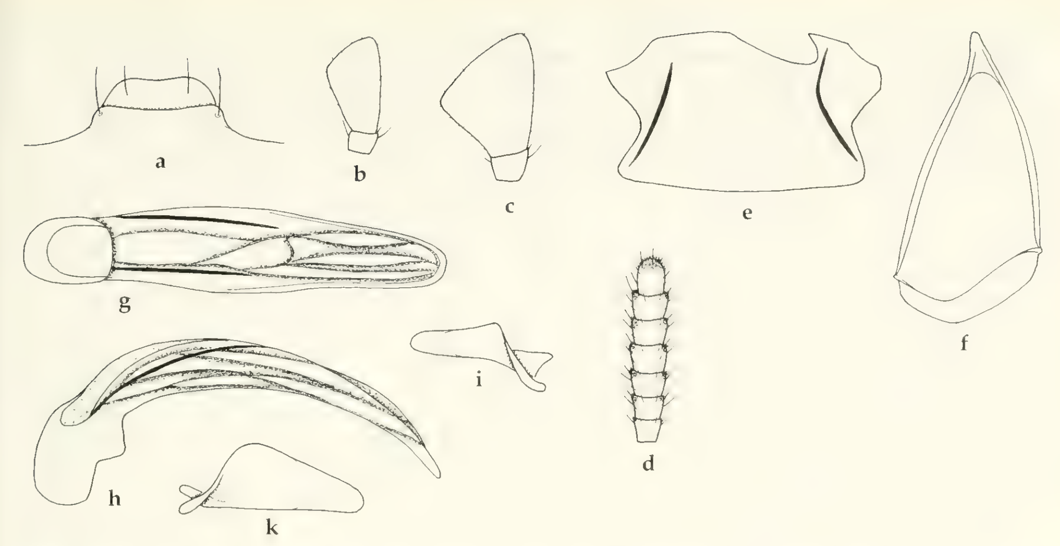
Etymology. Named in honour of the collector.

Adelotopus sericeus, spec nov.

Figs 105, 294, 446, 605

Types. Holotype: ♂, WAM Goldfields Survey, R. A. How MRR5 7/1979, Mallee 32°44'30"S, 120°01'30"E, Mc Dermid Rock, P1T/F, *Adelotopus* sp. det. T. A. Weir 1981 (ANIC). – Paratype: 1♂, same data (WAM 94/847)

Diagnosis. Rather large, moderately wide, rather depressed, uniformly black species with dull, markedly silky surface. Further distinguished from relative species by lesser size, almost invisible and impunctate elytral striae, almost invisible elytral punctures, rather asymmetric ♂ genital ring, and narrow and evenly curved aedeagus with wide apex.



Figs 105a-k. *Adelotopus sericeus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Description

Measurements (paratype somewhat damaged, not measurable). Length: c. 6.6-c. 7.0 mm. Ratios. Width/length of pronotum: c. 1.63; width base/apex of pronotum: 1.70; width pronotum/head: 1.84; length/width of elytra: c. 1.45; length elytra/pronotum: c. 2.43.

Colour. Dull black. Lower surface of head and thorax black, of abdomen reddish-piceous, posteriorly lighter. Mouthparts, antennae, and tibiae and tarsi reddish-piceous, femora blackish, at anterior border piceous.

Head (Figs 105a-d, 294). Short and wide, rather depressed. Anterior border feebly convex, lateral angle feebly obtuse. Clypeal suture shallow, complete, semicircular. Labrum comparatively wide, apex gently concave. Antennal groove laterally barely bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 8 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, feebly widened, not securiform. Terminal palpomere of labial palpus moderately widened, longer than wide, feebly securiform. Antenna short, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, dense, puncturation invisible, surface with a shallow sulcus medially of eyes, impilose, fairly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field almost impunctate and asetose. Both palpi rather sparsely setose, gula sparsely punctate and setose.

Pronotum (Fig. 294). Moderately wide, moderately convex, base c. 1.7 × as wide as apex. Apical angles produced, rather acute, attaining posterior third to half of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest near basal angles, very finely, inconspicuously bordered, moderately explanate. Basal angles almost rectangular, slightly produced backwards, at apex barely rounded off, base laterally faintly concave, in middle feebly produced, not bordered. Microreticulation fine though distinct, almost isodiametric, puncturation almost invisible, surface with some fine, irregular strioles, impilose, rather silky.

Elytra (Figs 294, 446). Moderately elongate and wide, moderately convex, in basal three fourth almost parallel, then gently narrowed. Apex slightly oblique, apical angles widely rounded, truncature feebly concave. Shoulders obtuse, basal margin oblique, with 2-3 short setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border complete, well developed, meeting at suture. Lateral border asetose. Series of umbilical pores consisting of 5 or 6 pores behind shoulder and 1 pore in middle. Setae very short. Striae in basal two thirds very vaguely indicated as extremely fine, wavy lines, apically absent, sutural stria invisible, suture apically barely raised.

Puncturation becoming apically denser and more distinct, though generally very difficult to detect within the strong microreticulation. Microreticulation rather fine, though very distinct, isodiametric, coarser than on fore body, becoming coarser towards apex. Surface impilose, markedly silky.

Lower surface. Prosternal process moderately elongate, rather wide, straight, rather depressed, apex straight, shortly setose. Metepisternum elongate, >2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna with 1-2 setae each side, sternum VI with c. 12 rather elongate setae at apical border, and some short setae near border and on surface. Lower surface rather sparsely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur comparatively shallow, anterior plate only at apex distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 105e-k). Genital ring narrow, rather asymmetric. Sternum VII moderately wide, apically deeply excised, basally slightly convex. Aedeagus rather elongate, narrow, depressed, symmetric, strongly and evenly curved. In posterior part of upper surface laterally with sharp edge. Apex wide, rounded off. Orifice elongate, internal sac rather simple. Both parameres rather narrow and elongate, though left larger than right.

♀ genitalia. Unknown.

Variation. Very little variation noted.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown, so far collected in July.

Distribution (Fig. 605). Interior of southwestern Australia. Known only from type locality.

Material examined (2). Only the holotype and one paratype.

Etymology. The name refers to the highly sericeous lustre of the surface.

Adelotopus howdenorum, spec. nov.

Figs 106, 295, 447, 605

Types. Holotype: ♂, Australia: WA, Mt. Madden, 23-24.IX.1981, H. & A. Howden (ANIC). – Paratype: 1♀, Coolgardie hd.(?), 29 Aug 1958, Le Souef (NMV).

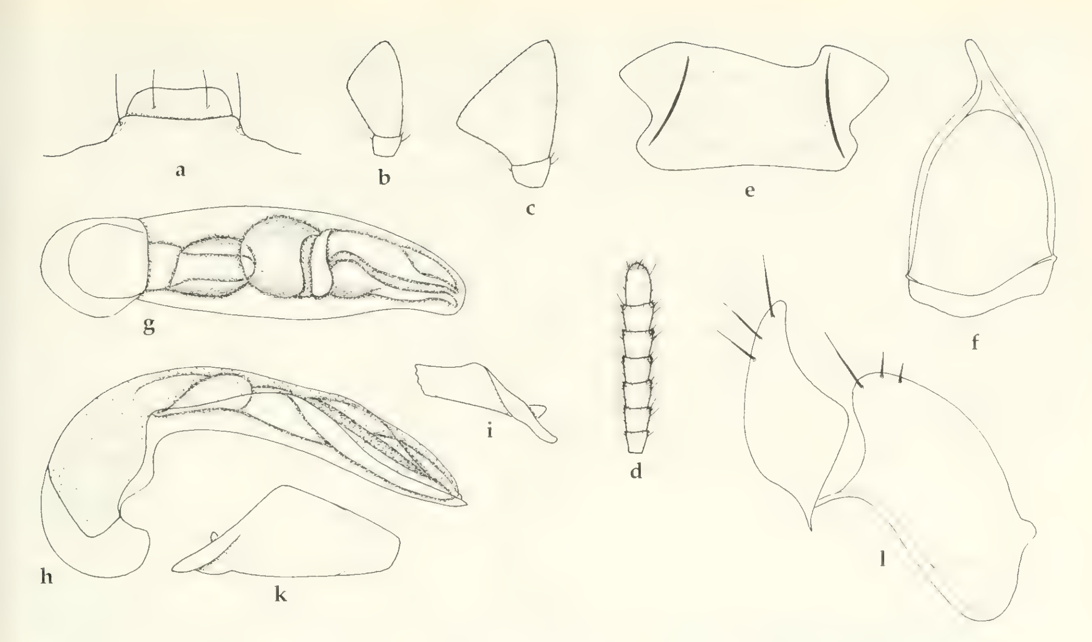
Diagnosis. Rather large, wide, rather depressed, uniformly black species with dull, though somewhat silky surface. Further distinguished from relative species by lesser size, almost invisible and impunctate elytral striae, small and barely rasp-like elytral punctures, wide ♂ genital ring, rather wide, basally very curved aedeagus with wide, slightly turned apex markedly acute ♀ stylomere.

Description

Measurements. Length: 6.70-6.75 mm. Ratios. Width/length of pronotum: 1.79-1.81; width base/apex of pronotum: 1.76; width pronotum/head: 1.85-1.88; length/width of elytra: 1.23-1.27; length elytra/pronotum: 2.23-2.33.

Colour. Dark piceous to black, lateral borders and apex of abdomen piceous. Lower surface of head and thorax black, of abdomen dark reddish-piceous, posteriorly lighter. Mouthparts, antennae, and legs dark reddish-piceous.

Head (Figs 106a-d, 295). Short and wide, rather depressed. Anterior border feebly convex, lateral angle feebly obtuse. Clypeal suture shallow, in middle more or less reduced, semicircular. Labrum comparatively wide, apex gently concave. Antennal groove laterally barely bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, near apex strongly rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 8 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus distinctly widened, apex securiform. Terminal palpomere of labial palpus large, extremely widened, much wider than long, markedly securiform. Antenna rather short, 8th-9th antennomeres wider than long. Microreticulation very fine, dense, puncturation minute, difficult to see, surface with a shallow sulcus medially of eyes, impilose, slightly



Figs 106a-l. *Adelotopus howdenorum*, spec. nov. Details of head and genitalia. For legends see fig. 100.

silky. Ventrolaterally of eyes with a row of short setae. Suborbital field finely punctate and densely setose. Both palpi rather sparsely setose, gula punctate and setose.

Pronotum (Fig. 295). Wide, moderately convex, base c. 1.75 × as wide as apex. Apical angles produced, rather acute, attaining posterior third to half of eyes. Apex deeply, rectangularly excised, slightly convex in excision, not bordered. Sides strongly and evenly curved, widest at or near basal angles, barely or not at all bordered, moderately explanate. Basal angles slightly obtuse, at apex barely rounded off, base straight, sometimes in middle feebly produced, not bordered. Microreticulation fine though distinct, almost isodiametric, puncturation minute, more or less easily detected under high magnification, surface with some fine, irregular strioles, impilose, rather silky.

Elytra (Figs 295, 447). Rather short and wide, moderately convex, in basal two fifth almost parallel, then gently narrowed. Apex slightly oblique, apical angles widely rounded, truncature feebly concave. Shoulders obtuse, basal margin oblique, with a row of 6-8 short setae a distance down the lateral margin, margin there slightly serrate. Marginal channel narrow, completely visible from above. Basal border complete, well developed, meeting at suture. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 pore (rarely unilaterally 2 pores) behind middle or at apical third. Setae very short. Striae in basal two thirds vaguely indicated as extremely fine, wavy lines, apically absent, sutural stria invisible, suture apically raised. Puncturation at base indistinct, apically becoming gradually denser and more distinct, though still fine. Near apex punctures faintly rasp-like, rather irregular. Microreticulation fine, though distinct, isodiametric. Surface impilose, somewhat silky.

Lower surface. Prosternal process moderately elongate, wide, straight, rather depressed, apex widely rounded, shortly setose. Metepisternum moderately elongate, slightly <2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna with 1-2 setae each side, sternum VI in both sexes moderately punctate and shortly setose, with many (c. 16-24), fairly elongate setae at and near apical border. Lower surface rather densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus not wider than long, tibial groove of profemur comparatively shallow, anterior plate only at apex distinctly overlapping the groove, posteriorly border of groove not sharp. Metatibia rather narrow, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus barely widened.

♂ genitalia (Figs 106e-k). Genital ring wide, rather asymmetric, with elongate apex. Sternum VII

very wide, apically moderately excised, basally slightly concave, lateral parts elongate. Aedeagus moderately elongate, fairly wide, moderately depressed, rather symmetric, lower surface near apex gently convex. Apex very wide, rounded off, slightly turned laterally. Orifice elongate, internal sac rather simple. Right paramere moderately elongate, apex unknown, broken. Left paramere much larger, margins straight, apex transversely cut.

♀ genitalia (Fig. 106l). Stylomere 2 triangular, apically narrow and acute, with 3 subapical setae. Lateral plate rather elongate, with 1-2 elongate and 1-2 short apical setae.

Variation. Little noted due to scarce material. The ♀ specimen is slightly narrower and more convex.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. So far collected in August and September.

Distribution (Fig. 605). Interior of southwestern Australia.

Material examined (2). Only the type series.

Etymology. Named in honour of the collectors of the holotype.

katherinei-group

Diagnosis. Medium-sized, rather depressed, uniformly black species. Labrum bisetose; glossa c. 10-setose; lateral margin of pronotum widely explanate, basal angle rounded off; basal border line of elytra abbreviated, attaining inner quarter of base; scutellar pore absent; lateral margin of elytra without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores and 1 postmedian pore; abdominal sterna without ambulatory setae; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; mesofemur and metafemur wide and depressed, profemur less wide; internal sac of aedeagus complicate, with oblique fold near apex.

Larvae. Unknown.

Distribution. A single species from the northern part of the Northern Territory.

Systematic position. This group is certainly closely related to and is perhaps the adelphotaxon of the *brevipennis*-group, though it is slightly more plesiomorphic in the longer basal border of elytra and the presence of the postmedian marginal pore.

Adelotopus katherinei, spec. nov.

Figs 31, 107, 296, 448, 605

Types. Holotype: ♂, Australien, NT, Katherine Gorge, 6.-8.11.1984, M. & B. Baehr (MNTD).

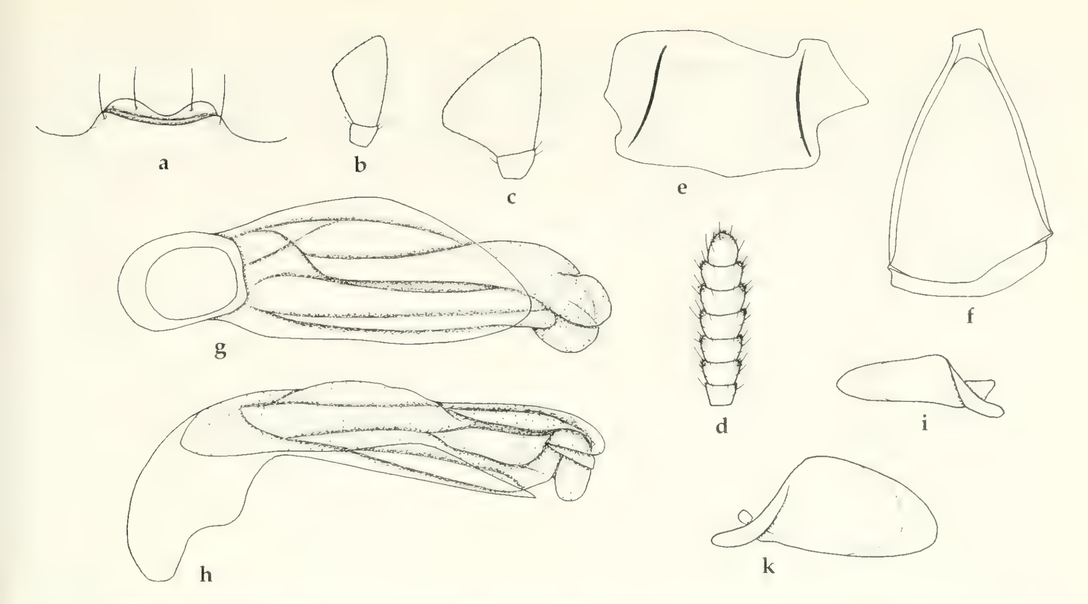
Diagnosis. Medium-sized, rather short and wide, convex, dull piceous-black species with explanate, at base rounded margin of pronotum. Further distinguished from related species by dense and coarse elytral microreticulation, impilose surface, short and wide apex of prosternal process, and narrow, elongate parameres with somewhat acute apex.

Description

Measurements. Length: 5.8 mm. Ratios. Width/length of pronotum: 1.85 ; width base/apex of pronotum: 1.63; width pronotum/head: 1.69; length/width of elytra: 1.21; length elytra/pronotum: 2.30.

Colour. Black, lateral margins of pronotum and elytra reddish-piceous translucent. Lower surface piceous. Mouth parts and antenna reddish-piceous, legs piceous.

Head (Figs 107a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle narrowly interrupted. Labrum rather narrow, apex deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like,



Figs 107a-k. *Adelotopus katherinei*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation extremely fine, though distinct, puncturation very fine and fairly dense, surface with a shallow sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field at least laterally faintly punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 296). Wide, convex, base wide, apex rather narrow. Apical angles moderately produced, fairly acute, slightly oblique, attaining posterior third of eyes. Apex moderately deeply excised, rather convex in excision, not bordered. Sides curved throughout, widest near basal angles. Margins faintly bordered, fairly explanate. Basal angles shortly rounded off. Base almost straight, not bordered. Surface near base without transverse impression. Microreticulation rather fine, very distinct, puncturation very fine, moderately dense, rather difficult to detect, surface with several short, irregular strioles, impilose, rather dull, faintly coriaceous.

Elytra (Figs 296, 448). Short, rather convex, margins slightly convex throughout. Apex rather wide, oblique, truncature faintly concave, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather wide, completely visible from above. Basal border incomplete, present in lateral ¾ of elytron, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and an additional pore behind middle. Setae very short. Striae including sutural stria almost absent, only inner striae in basal half vaguely indicated by extremely fine longitudinal lines. Microreticulation coarse, isodiametric, very distinct, puncturation present though difficult to see. Surface with some faint irregular transverse strioles, impilose, rather dull.

Lower surface. Prosternal process rather short, fairly wide, straight, depressed, apex short and wide, rounded off, shortly setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur rather wide. Metatibia moderately elongate, <5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 107e-k). Genital ring rather narrow, triangular, slightly asymmetric, arms feebly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically straight, with rather shallow excision, basally almost faintly trianglar and bisinuate, lateral parts triagonal, rather elongate. Aedeagus short, moderately depressed, in middle rather widened, slightly asymmetric. Lower surface gently convex. Apex rather wide, widely rounded. Orifice rather short, internal sac fairly complex, though in single available specimen partly everted. Both parameres rather elongate, with obtusely rounded apex, left considerably larger than right.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Collected under bark of gum-type eucalypt in November.

Distribution (Fig. 605). Northern part of Northern Teritory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the type locality, the Katherine Gorge.

brevipennis-group

Diagnosis. Medium-sized, rather depressed, uniformly black to yellowish, or vividly patterned species. Labrum bisetose; glossa c. 10-setose; lateral margin of pronotum widely explanate, basal angle angulate or obtuse; basal border line of elytra abbreviated, rarely longer than half of base; scutellar pore absent; lateral margin of elytra without elongate setae behind shoulders; series of lateral pores with 2-6 subhumeral pores only; abdominal sterna usually without ambulatory seta each side, only in one species with 1-2 setae; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; mesofemur and metafemur wide and depressed, profemur less wide; internal sac of aedeagus complicate, with oblique fold near apex.

Larvae. 1st instar larvae known of 2 species.

Distribution. 12 species and additional 2 subspecies from whole eastern Australia, the northern part of Northern Territory, northwestern Australia, and the interior of southwestern Australia. The bulk of the species, however, concentrates in northern and northwestern Australia.

Systematic position. This group is perhaps generalized in some aspects, e.g. depressed body with explanate margins of pronotum, but apomorphic in several others, e.g. light colour of some species, absence of ambulatory setae of the abdomen, complexly shaped internal sac of aedeagus. It is presumably the apomorphic adelphotaxon of the *katherinei*-group.

Adelotopus brevipennis Macleay, 1888

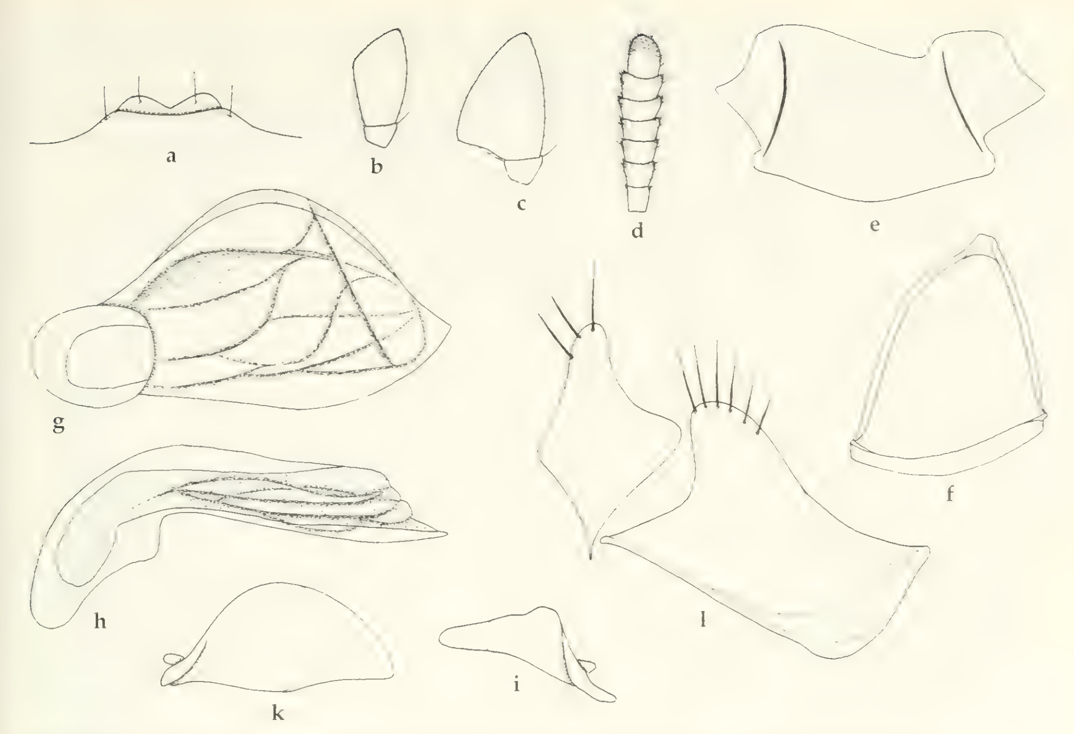
Figs 32, 108, 297, 449, 606

Adelotopus brevipennis Macleay, 1888, p. 459; Sloane 1898, p. 514; Lea 1910, p. 120, 121; Notman 1925, p. 7, 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 49.

Types. Lectotype (by present designation): ♂, Syntype, *Adelotopus brevipennis* Macl., Kings Sound (ANIC-MMS). – Paralectotype: 1♂, same data, on same card (ANIC-MMS).

Type locality. "Kings Sound", Western Australia.

Diagnosis. Medium-sized, short and wide, rather depressed, dull black to dark piceous species. Further distinguished from relative species by low number of umbilical pores, absence of distinct reddish margins of pronotum and elytra, very wide, markedly triangular ♂ genital ring, and depressed and extremely wide aedeagus with acute apex.



Figs 108a-l. *Adelotopus brevipennis* Macleay. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 5.3-6.8 mm. Ratios. Width/length of pronotum: 1.71-1.83; width base/apex of pronotum: 1.69-1.80; width pronotum/head: 1.74-1.81; length/width of elytra: 1.25-1.29; length elytra/pronotum: 2.27-2.34.

Colour. Dark piceous to dull black, sometimes suture and lateral borders slightly lighter. Lower surface reddish-piceous. Mouthparts, antennae, and legs dark reddish to reddish-piceous.

Head (Figs 108a-d, 297). Short and wide, rather depressed. Anterior border feebly convex, lateral angle slightly obtuse, though angles laterally distinctly projecting. Clypeal suture shallow, semicircular, in middle interrupted. Labrum narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately elongate, slightly widened, not markedly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna very short, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation extremely fine, dense, superficial, puncturation very fine, dense, though easily visible under high magnification, surface with a shallow sulcus medially of eyes, impilose, fairly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 297). Moderately wide, moderately convex, base c. 1.75 × as wide as apex. Apical angles produced, rather acute, attaining posterior third to half of eyes. Apex deeply, rectangularly excised, rather convex in excision, not bordered. Sides strongly and evenly curved, widest near basal angles, very finely, almost unbordered, moderately explanate. Basal angles almost rectangular, shortly rounded off, base straight to faintly concave, in middle more or less distinctly bordered. Microreticulation extremely fine and dense, rather superficial, almost isodiametric, puncturation fine, though rather distinct, dense, surface with or without some very fine, irregular strioles near base, impilose, fairly glossy, though somewhat silky.

Elytra (Figs 297, 449). Rather short and wide, moderately convex, in basal three fourth almost parallel, then gently narrowed. Apex wide, almost transverse, truncature feebly convex, apical angles shortly rounded. Shoulders rounded, basal margin oblique, without setae behind shoulders. Marginal channel moderate, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores usually consisting of 2 pores behind shoulder, sometimes only 1 pore or, more commonly and almost invariably in specimens from Hamersley Range, 3 pores present (in one specimen unilaterally even 5 pores!). Setae very short. Striae even in basal half almost invisible or most vaguely indicated as extremely fine, wavy lines, apically absent, sutural stria invisible. Microreticulation very fine, somewhat superficial, isodiametric to slightly transverse and arranged in irrgular transverse rows, less distinct than on fore body, becoming weaker towards apex. Puncturation fine, rather sparse, basally very indistinct, apically becoming denser and more distinct and faintly rasp-like. Surface impilose, moderately glossy, slightly silky.

Lower surface. Prosternal process rather elongate, rather wide, straight, depressed, apex markedly widened widely rounded off, shortly setose. Metepisternum rather elongate, slightly <2 × as long as wide, posteriorly constricted and hollowed. Abdominal sterna including sternum VI without setae at apical border. Lower surface rather sparsely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur rather deep, anterior plate at apex distinctly overlapping the groove, posteriorly border of groove sharp. Metatibia rather elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus slightly widened.

♂ genitalia (Figs 108e-k). Genital ring very wide, markedly triangular, with very narrow base. Sternum VII wide, apically feebly excised or only concave, basally triangularly convex. Aedeagus rather short, depressed, in middle remarkably widened, highly asymmetric, left border straight of faintly concave, markedly oblique, right border convex. Lower surface gently convex. Apex short, acute. Orifice rather short, internal sac fairly complex, with a large, oblique fold near apex. Right paramere fairly narrow, apex rather acute, left large, upper border strongly convex, apex narrow, gently rounded or almost acute.

♀ genitalia (Fig. 108l). Stylomere triangular, rather wide, apex narrow, rounded off, with 3-4 subapical setae. Lateral plate elongate, with 4-7 apical setae.

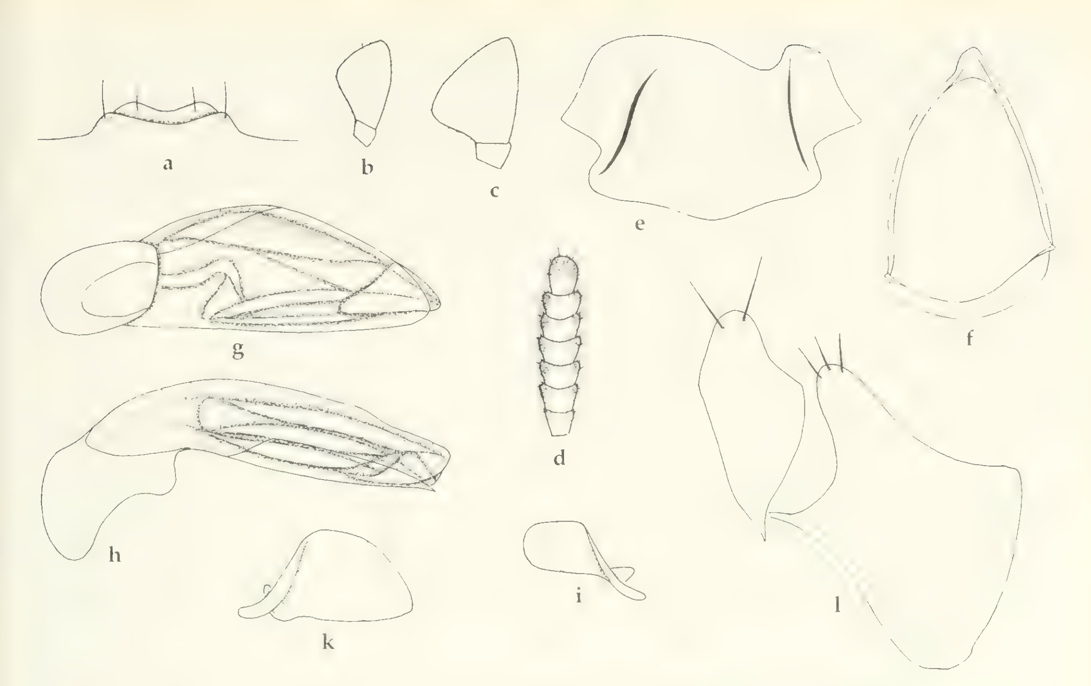
Variation. Slight variation noted in relative width of pronotum and elytra and in shape of ♂ and ♀ genitalia. There is a very large specimen from , however, that varies so some degree from the rather uniform appearance of this species, mainly by large size, wide pronotum, and wide and distinctly lighter margins of pronotum and elytra. It is but tentatively alluded to this species.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river eucalypts near the borders of dry creeks and dry and water-bearing rivers, also at light, a specimen captured by T. F. Houston "on trunk of *Eucalyptus* sp. *camaldulensis*", others in "Malaise trap". Some specimens mounted together with ants of the genus *Iridomyrmex* Mayr on same card. So far collected in the period from October to April.

Distribution (Fig. 606). Northern part of Northern Territory east to border of Arnhem Land, adjacent tropical Western Australia south to Fortescue River.

Material examined (59). **NT:** 2♀♀, Humpty Doo 12°35'S 131°05'E, Mt. Mortgage, 3 Dec 1991-17 Jan 92, Wells & Webber (MNTD); 3♀♀, Humpty Doo 12°35'S 131°05'E, Mt. Mortgage, 18 Jan -28 Feb 1992, Wells & Webber (MNTD); 1♂, 1♀, Mary River, 110 km e. Darwin, 1.11.1984, M. & B. Baehr (CBM); 1♀, NT 95/52, Mary River, 115 km e. Darwin, 29.-30.8.1995, M. Baehr (CBM); 1♀, Port Darwin, (MMS); 1♂, NT 95/48, 30 km n. Edith River Cr., 28.8.1995, M. Baehr (CBM); 1♂, Katherine Gorge, 6.-8.11.1984, M. & B. Baehr (CBM); 1♀, N. T. Katherine Gorge NP, 4-6 Dec.1980, M. B. Malipatil (MNTD); 1♂, 2♀♀, Katherine IV.71 (CSB); 2♀♀, Daly, N.W.A., W. D. Dodd (SAMA); 1♂, NT 95/41, 70 km e. Kununurra, 23.8.1995, M. Baehr (CBM). – **WA:** 2♂♂, 1♀, Ord River b. Ivanhoe, 11.-13.11.1984, M. & B. Baehr (CBM); 1♀, Wyndham, S. Stephens 20.II.01, *Adelotopus* (SAMA); 2♂♂, Kimberley district, Mjöberg, *Adelotopus brevipennis* Macl. Id. by T. G. Sloane (NHRS); 1♂, Ord R. *brevipennis*, *Adelotopus brevipennis* M. (SAMA): 12 ?♀♀, 135 km n. Halls Creek, 14.11.1984, M. & B. Baehr (CBM, MCZ, ZSM); 1♀, WA 95/33, Elvire River, [illegible] Halls Creek, 20.8.1995, M. Baehr (CBM); 1♂, Fitzroy Crossing, 18.-20.11.1984, M. & B. Baehr (CBM); 1 [illegible] A 95/30, Fitzroy Crossing, 18.-19.8.1995, M. Baehr (CBM); 1♂, WA 95/31, 110 km se. Fitzroy Crossing, [illegible] 995, M. Baehr (CBM); 1♂, 150 km e. Derby, 2 km w. Windjana Gorge, 22.11.1984, M. & B. Baehr (CBM); [illegible] berley Lennard River Xing Gibb River Road 17.23S, 124.44E 31



Figs 109a-l. *Adelotopus elongatulus* Macleay. Details of head and genitalia. For legends see fig. 100.

March 1988 T. F. Houston 679-1 (WAM 94/ 879); 2♂♂, Syntype, *Adelotopus brevipennis* Macl., Kings Sound (lectotype!, paralectotype!)(ANIC-MMS); 1♂, W. W. Froggatt Coll., *Adelotopus elongatus* Macl. Kings Sound (ANIC); 1♂, Derby, Mjöberg, Oct. *Adelotopus brevipennis* Macl. Id. by T. G. Sloane (NHRS); 1♂, D. D. Giuliani 6.XII.1968, Derby, *Adelotopus* sp. E. B. Britton det. 1971 (WAM); 5♂♂, 3♀♀, Fortescue R. Hammersley Range: W. D. Dodd, *Adelotopus* (SAMA); 2♀♀, Millstream, 3.-5.12.1984, M. & B. Baehr (CBM).

Adelotopus elongatulus Macleay, 1888

Figs 109, 298, 450, 607

Adelotopus elongatulus Macleay, 1888, p. 459; Notman 1925, p. 6, 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50.
Adelotopus longipennis Macleay, 1888, p. 460; Notman 1925, p. 7, 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51 (**new synonymy**).

Types. Of *elongatulus*. Lectotype (by present designation): ♂, N. W. Austr., Syntype, *Adelotopus elongatulus* Macl. Kings Sound. N. W. A. (ANIC-MMS). – Paralectotype: 1♂, N. W. Austr., Syntype, *Adelotopus elongatulus* Macl. Kings Sound. N. W. A. (ANIC-MMS).

Of *longipennis*. Lectotype (by present designation): ♀, N. W. Austr., Syntype, *Adelotopus longipennis* Macl. Kings Sound. N. W. A. (ANIC-MMS). – Paralectotype: 1♀, N. W. Austr., Syntype, *Adelotopus longipennis* Macl. Kings Sound. N. W. A. (ANIC-MMS).

Type localities. Of *elongatulus*: "Kings Sound", Western Australia. – Of *longipennis*: "Kings Sound", Western Australia.

Diagnosis. Medium-sized, narrow and elongate, rather depressed, dark reddish-piceous species with lighter margins and suture. Further distinguished from relative species by moderately wide, on left side oblique aedeagus with rounded apex, and short and wide parameres.

Description

Measurements. Length: 5.65-6.2 mm. Ratios. Width/length of pronotum: 1.69-1.72; width base/ apex of pronotum: 1.51-1.60; width pronotum/head: 1.55-1.63; length/width of elytra: c. 1.62-1.68;

length elytra/pronotum: 2.59-2.75.

Colour. Dark reddish-piceous, all margins of pronotum, suture and lateral margins of elytra slightly lighter. Lower surface, mouth parts, and legs reddish-piceous.

Head (Figs 109a-d). Short and wide, rather depressed. Anterior border convex, lateral angle obtuse, angle laterally slightly projecting. Clypeal suture shallow, semicircular, in middle interrupted. Labrum narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather wide, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna very short, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation extremely fine, dense, superficial, puncturation fine, dense, though easily visible under high magnification, surface with a shallow sulcus medially of eyes, impilose, fairly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 298). Moderately wide, moderately convex, apex rather wide, base >1.5 × as wide as apex. Apical angles produced, rather acute, attaining posterior third of eyes. Apex deeply, rectangularly excised, rather convex in excision, not bordered. Sides moderately curved, widest behind middle, though but slightly curved to base. Sides almost unbordered, moderately explanate. Basal angles almost rectangular, slightly produced backwards, at apex shortly rounded off. Base laterally faintly concave, in middle slightly produced, very indistinctly bordered. Microreticulation extremely fine and dense, rather distinct, almost isodiametric, puncturation moderately fine, distinct, dense, surface with some very fine, irregular strioles near base, impilose, fairly glossy, though somewhat silky.

Elytra (Figs 298, 450). Elongate and narrow, moderately convex, parallel, only near apex gently narrowed. Apex wide, almost transverse, truncature feebly convex, apical angles shortly rounded. Shoulders obtuse, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, though deep, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores usually consisting of 6, sometimes unilaterally 7 pores behind shoulder. Setae short. Striae even in basal half almost invisible or vaguely indicated as extremely fine, wavy lines, apically absent, sutural stria invisible. Microreticulation fine, somewhat superficial, isodiametric, less distinct than on fore body. Puncturation very fine, rather sparse, much weaker than on fore body, basally very indistinct, apically more distinct. Surface impilose, moderately glossy, slightly silky.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, slightly rounded off, shortly setose. Metepisternum rather elongate, slightly >2 × as long as wide, posteriorly constricted but barely hollowed. Abdominal sterna including sternum VI without setae at apical border. Lower surface rather sparsely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus barely wider than long, tibial groove of profemur rather deep, anterior plate only at apex distinctly overlapping the groove, posterior border of groove less sharp. Metatibia rather elongate, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus slightly widened.

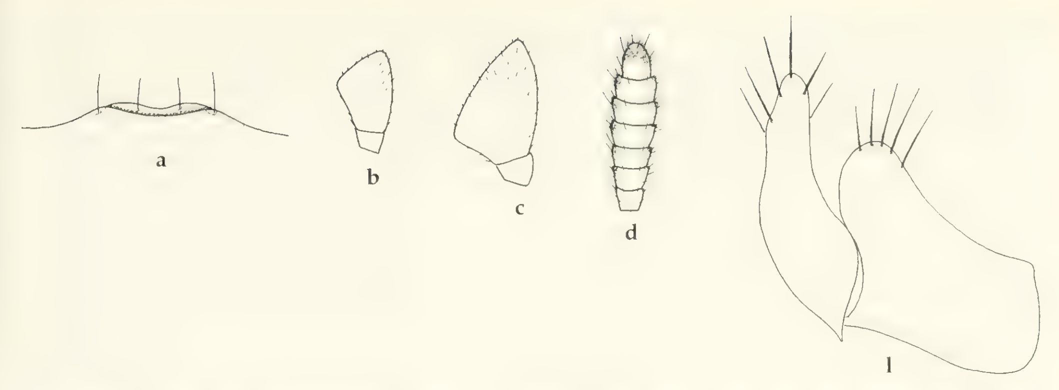
♂ genitalia (Figs 109a-d). Genital ring moderately wide, slightly assymetric, with narrow base. Sternum VII rather wide, apically fairly excised, basally triangularly convex. Aedeagus medium-sized, depressed, in middle moderately widened, asymmetric, left border gently convex, oblique. Lower surface gentlx convex. Apex rather wide, rounded off. Orifice rather elongate , internal sac fairly complex, with a short fold near apex. Both parameres short and wide, right with widely rounded apex, left large, upper border strongly convex, apex narrow, gently rounded.

♀ genitalia (Fig. 109l). Stylomere triangular, moderately wide, apex wide, rounded off, with 1-2 subapical setae. Lateral plate rather short, with 3 apical setae.

Variation. Only some variation of relative length of elytra noted. The light reddish coloured syntypes of *longipennis* apparently immature specimens.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Only old, inaccurately labelled specimens from "Kings Sound" known.



Figs 110a-d, l. *Adelotopus rufomarginatus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Distribution (Fig. 607). Northwestern part of Western Australia. Known only from type locality. The type locality, however, is so inaccurate, that the species could be distributed throughout the whole of the Kimberley Division. No recent records available.

Material examined (5). **WA:** 2♂♂, *Adelotopus elongatulus* Macl. Kings Sound. (lectotype!, paralectotype!) (ANIC-MMS); 2♀♀, *Adelotopus longipennis* Macl. Kings Sound. (lectotype!, paralectotype!) (ANIC-MMS); 1♂, W. W. Froggatt Collection, *Adelotopus elongatulus* Mcl. Kings Sd. (ANIC).

Adelotopus rufomarginatus, spec. nov.

Figs 110, 299, 451, 607

Types. Holotype: ♀, Caranbirini W. H., 16.16S, 136.05E, 33 km SW of Borroloola, NT, 3 Nov.1975, M. S. Upton (ANIC).

Diagnosis. Medium-sized, short and wide, rather depressed, glossy black species with wide and conspicuously reddish translucent borders of pronotum and elytra. Further distinguished from relative species by low number of umbilical pores and the narrow and elongate stylomere.

Description

Measurements. Length: 7.0 mm. Ratios. Width/length of pronotum: 1.72; width base/apex of pronotum: 1.82; width pronotum/head: 1.84; length/width of elytra: 1.25; length elytra/pronotum: 2.22.

Colour (Fig. 299). Glossy black, lateral border of pronotum and elytra distinctly reddish translucent. Lower surface reddish-piceous, base and apex of abdomen light reddish-piceous. Mouth parts, antennae, and legs reddish-piceous, tibiae and tarsi piceous.

Head (Figs 110a-d, 299). Short and very wide, rather depressed. Anterior border almost straight, lateral angle obtuse, angle laterally distinctly projecting, lateral border concave. Clypeal suture shallow, semicircular, in middle interrupted. Labrum very narrow, apex concave. Antennal groove laterally moderately sharply bordered, latero-posteriorly with convex, slightly carinate area. Mental tooth triangular, very short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna very short, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation extremely fine, highly superficial, visible only iunder high magnification, puncturation very fine, moderately dense, surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and finely setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 299). Wide, moderately convex, base wide, apex rather narrow. Apical angles

produced, acute, attaining posterior half of eyes. Apex deeply, rectangularly excised, rather convex in excision, faintly bordered. Sides anteriorly strongly curved, posteriorly straight, widest at base. Sides almost unbordered, markedly explanate and channeled. Basal angles rectangular, at apex shortly rounded off. Base laterally faintly concave, in middle slightly produced, almost straight, very indistinctly bordered. Surface near base with shallow transverse impression. Microreticulation extremely fine, highly superficial, barely visible even under high magnification, isodiametric, puncturation fine, though distinct, dense, surface with some very fine, irregular strioles near base, impilose, glossy.

Elytra (Figs 299, 451). Short and wide, moderately convex, in basal three fourth almost parallel, then gently narrowed. Apex wide, almost transverse, truncature feebly convex, apical angles shortly rounded. Shoulders rounded, basal margin oblique, without setae behind shoulders. Marginal channel wide and deep, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 3 widely spaced pores behind shoulder. Pores and setae very inconspicuous. Striae not visible, sutural stria absent. Microreticulation extremely fine, highly superficial, barely visible even at high magnification, isodiametric, puncturation fine, though rather distinct, fairly dense. Surface impilose, glossy.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, slightly rounded off, shortly setose. Metepisternum rather elongate, c. 2 × as long as wide, posteriorly constricted but barely hollowed. Abdominal sterna including sternum VI without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur rather deep, anterior plate only at apex distinctly overlapping the groove, posterior border of groove rather sharp. Metatibia rather narrow, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 110l). Stylomere narrow and elongate, apex narrow, obtuse, with 2-4 subapical setae. Lateral plate elongate, with 4-5 apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in November.

Distribution (Fig. 607). Northeastern part of Northern Territory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the wide, rufous margins of pronotum and elytra.

Adelotopus adelaideae, spec. nov.

Figs 111, 300, 452, 607

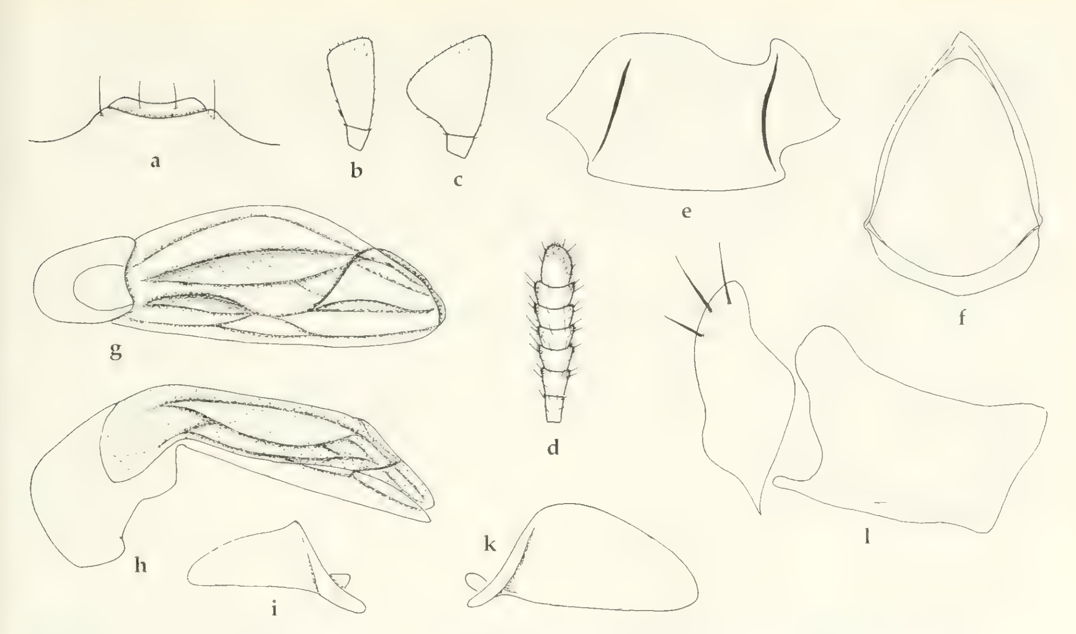
Types. Holotype: ♂, Adelaide River 92.-20, *Adelotopus* sp. ? Id. by T. G. Sloane (BMNH). – Paratypes: 5♂♂, 3♀♀, Adelaide River, N. W. Australia, J. J. Walker, G. C. Champion Coll. 1927-409 (BMNH, CBM); 1♂, 2♀♀, Adelaide River 92-20 (BMNH).

Diagnosis. Medium-sized, rather elongate, depressed, markedly dull, black species with explanate margin of pronotum. Further distinguished from relative species by dense and rugose puncturation of pronotum, moderately wide aedeagus with rounded apex and rather large fold in internal sac, and large, similarly shaped parameres.

Description

Measurements. Length: 6.1-7.8 mm. Ratios. Width/length of pronotum: 1.80-1.84; width base/apex of pronotum: 1.72-1.77; width pronotum/head: 1.80-1.86; length/width of elytra: 1.36-1.39; length elytra/pronotum: 2.58-2.68.

Colour. Dull black, borders of pronotum and elytra sometimes indistinctly reddish-piceous translucent. Lower surface blackish to piceous. Mouth parts and antennae reddish-piceous, legs piceous.



Figs 111a-l. *Adelotopus adelaideae,* spec. nov. Details of head and genitalia. For legends see fig. 100.

Head (Figs 111a-d). Short and wide, rather depressed. Anterior border gently convex, lateral angle rounded, angle laterally barely projecting. Clypeal suture almost invisible. Labrum very narrow, apex concave. Antennal groove laterally moderately sharply bordered, latero-posteriorly with convex, not carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, barely securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna comparatively elongate, 8th-9th antennomeres c. 1.3 × as wide as long. Microreticulation fine, rather distinct, puncturation dense and moderately coarse, surface with a shallow sulcus medially of eyes and with some strioles, impilose, dull. Ventrolaterally of eyes with a row of short setae. Suborbital field almost impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 300). Wide, rather depressed, base wide, apex rather narrow. Apical angles produced, acute, attaining posterior third of eyes. Apex deeply, rectangularly excised, straight in excision, faintly bordered. Sides anteriorly strongly curved, posteriorly feebly curved, widest slightly in front of base. Sides almost unbordered, fairly explanate, but not channeled. Basal angles c. 100°, apex obtuse. Base almost straight, very indistinctly bordered. Surface near base with more or less distinct transverse impression. Microreticulation fine, rather superficial, isodiametric to somewhat irregular, puncturation dense and moderately coarse, surface with network of irregular strioles, coriaceous, impilose, markedly dull.

Elytra (Figs 300, 452). Moderately elongate, depressed, markedly parallel, gently narrowed near apex. Apex wide, faintly oblique, truncature feebly convex, apical angles shortly rounded. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, though distinct, isodiametric, puncturation fine, moderately dense, much finer and sparser than on pronotum, punctures somewhat rasp-like. Surface impilose, markedly dull.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, slightly rounded off, shortly setose. Metepisternum moderately elongate, cslightly <2 × as

long as wide, posteriorly not constricted nor hollowed. Abdominal sterna with 1-2 setae at apical border. Sternum VI without elongate setae. Lower surface densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus barely wider than long, tibial groove of profemur moderately deep, anterior plate only at apex distinctly overlapping the groove, posterior border of groove rather sharp. Femur comparatively narrow. Metatibia narrow and elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 111e-k). Genital ring rather wide, slightly assymetric, with narrow base. Sternum VII rather wide, apically rather deeply excised, basally almost straight, lateral parts large. Aedeagus medium-sized, rather depressed, in middle moderately widened, asymmetric, left border gently convex, oblique. Lower surface gently convex to almost straight. Apex rather wide, rounded off. Orifice rather short, internal sac fairly complex, with a wide fold near apex. Both parameres large and rather wide, with widely rounded apex, left considerably largerthan right.

♀ genitalia (Fig. 111l). Stylomere triangular, moderately wide, apex rather narrow, rounded off, with 2-3 subapical setae. Lateral plate rather elongate, apparently without apical setae.

Variation. Apart from some differences of size very little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Not even the dates of collecting known. This species is actually known only from old material.

Distribution (Fig. 607). Northern part of Northern Territory. Known only from type locality.

Material examined (12). Only the type series.

Etymology. The name refers to the type locality, the Adelaide River.

Adelotopus rufescens, spec. nov.

Figs 112, 113, 301, 453, 607

Types. Holotype: ♂, Australia: n WA Kununurra 22.XII.1991-5.1.1992 R. I. Storey (QMB T26064). – Paratypes: 1♀, same data (DPIM); 1♀, A. Douglas. leg. 1-12.II.1965, Mt. Hart. W. Aust. (WAM 87/2171).

Diagnosis. Medium-sized, rather wide, depressed, dull, light reddish species with explanate, rectangular margin of pronotum. Further distinguished from relative species by very wide pronotum, rather narrow, triangular ♂ genital ring, moderately wide aedeagus that is widest close to apex, with rounded apex and rather small fold in internal sac, and large left paramere with wide apex.

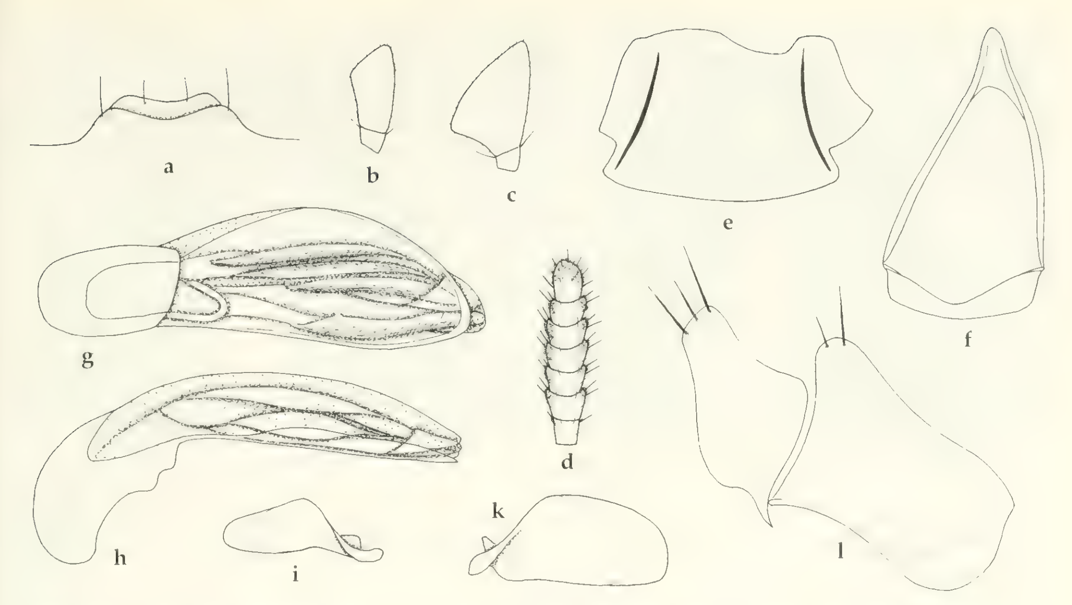
Description

Measurements. Length: 6.5-6.9. Ratios. Width/length of pronotum: 1.84-1.88; width base/apex of pronotum: 1.74-1.76; width pronotum/head: 1.83-1.86; length/width of elytra: 1.24-1.33; length elytra/pronotum: 2.37-2.47.

Colour. Upper and lower surface including mouth parts, antennae, and legs uniformly light reddish.

Head (Figs 112a-d). Short and wide, rather depressed. Anterior border convex, lateral angle rounded, angle laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna moderately short, 8th-9th antennomeres slightly <1.5 × as wide as long. Microreticulation fine, rather distinct, puncturation very fine, rather dense, fairly difficult to see, surface with a shallow sulcus medially of eyes, rather densely pilose, fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field at least laterally punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Figs 113, 301). Wide, depressed, base wide, apex rather narrow. Apical angles produced, acute, attaining posterior half of eyes. Apex deeply, rectangularly excised, faintly convex in



Figs 112a-l. *Adelotopus rufescens*, spec. nov. Details of head and genitalia. For legends see fig. 100.

excision, faintly bordered. Sides anteriorly strongly curved, posteriorly feebly though distinctly curved, widest slightly in front of base. Sides faintly bordered, explanate, but not channeled. Basal angles almost rectangular, distinctly produced backwards, apex obtuse. Base laterally concave, in middle produced, very indistinctly bordered. Surface near base with more or less distinct transverse impression. Microreticulation fine, though distinct, isodiametric to somewhat irregular, puncturation dense and moderately fine, surface with faint network of irregular strioles, somewhat coriaceous, densely pilose, dull.

Elytra (Figs 301, 453). Moderately elongate, depressed, in basal two thirds parallel, then gently narrowed near apex. Apex rather wide, faintly oblique, truncature feebly convex, apical angles shortly rounded. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, though distinct, isodiametric, not coriaceous, puncturation fine, moderately dense, much finer and sparser than on pronotum, apically punctures somewhat rasp-like. Surface densely pilose, rather dull.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, faintly rounded off, shortly setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface densely punctate and pilose.

Legs. Elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, anterior plate only at apex distinctly overlapping the groove, posterior border of groove sharp. Femur comparatively narrow. Metatibia narrow and elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus >2.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 112e-k). Genital ring rather narrow and elongate, triangular, slightly assymetric, with narrow base. Sternum VII moderately wide, apically moderately deeply excised, basally feebly convex, lateral parts small. Aedeagus medium-sized, rather depressed, in apical third moderately widened, asymmetric. Lower surface gently convex to almost straight. Apex rather wide, rounded off. Orifice elongate, internal sac fairly complex, with a small fold near apex. Both parameres rather large and wide, right with rounded apex, left considerably larger than right and with very wide apex.

♀ genitalia (Fig. 112l). Stylomere triangular, wide, apex rather wide, obliquely rounded off, with 2-3 subapical setae. Lateral plate rather elongate, with 2 apical setae.



Figs 113-114. Head and pronotum. **113.** *Adelotopus rufescens,* spec. nov. **114.** *Adelotopus flavus,* spec. nov.

Variation. Apart from some differences in relative width of pronotum and elytra little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. So far collected from end of December to beginning of February.

Distribution (Fig. 607). Kimberley Division, northwestern Australia.

Material examined (3). Only the type series.

Etymology. The name refers to the light colour.

Adelotopus flavus, spec. nov.

Figs 114, 115, 302, 454, 607

Types. Holotype: ♂, NT, Mataranka, V-8-83. J. T. Doyen, *Adelotopus* sp. (not in MCZ) det. J. Liebherr 1987 (CUIC).

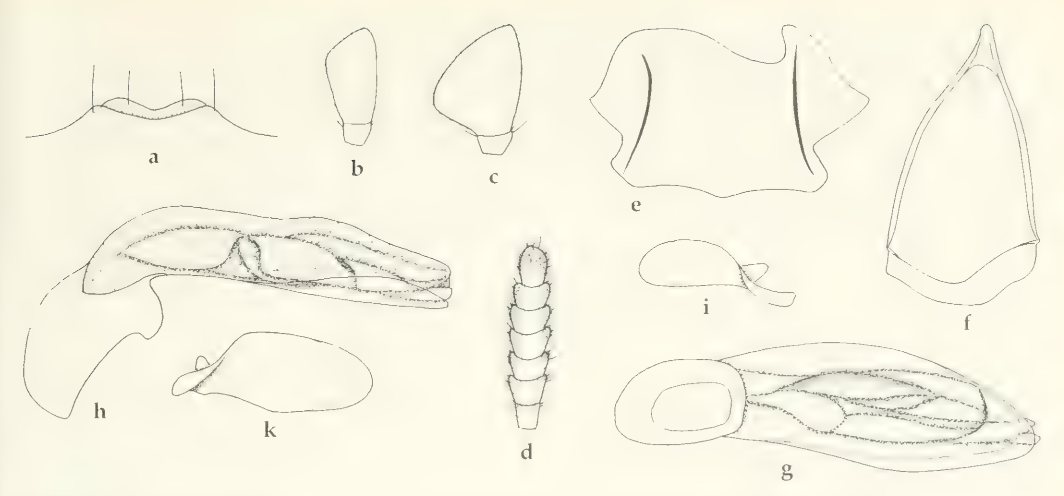
Diagnosis. Rather small, fairly wide, depressed, dull, yellowish species with explanate, rounded margin of pronotum. Further distinguished from relative species by narrow base of pronotum and the narrow, rather symmetric aedeagus.

Description

Measurements. Length: 5.5 mm. Ratios. Width/length of pronotum: 1.83 ; width base/apex of pronotum: 1.58; width pronotum/head: 1.74; length/width of elytra: 1.30; length elytra/pronotum: 2.50.

Colour. Head and centre of pronotum light reddish, margins of pronotum, elytra, lower surface, mouth parts, antennae, and legs yellowish. In apical third of elytra a vague, slightly darker transverse spot caused by the translucent folded wings.

Head (Figs 115a-d). Short and wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly wide, gently securiform. Terminal palpomere of labial palpus wide, securiform. Antenna moderately short, 8th-9th antennomeres slightly <1.5 × as wide as long. Microreticulation fine, though distinct, slightly coriaceous, punctuation rather sparse, mderately fine, fairly difficult to detect within microreticulation, surface with a



Figs 115a-k. *Adelotopus flavus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

shallow sulcus medially of eyes, rather densely pilose, fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Figs 114, 302). Rather wide, moderately depressed, base rather wide, apex fairly narrow. Apical angles produced, acute, attaining posterior third of eyes. Apex deeply, rectangularly excised, faintly convex in excision, faintly though distinctly bordered. Sides strongly curved throughout, widest in basal third. Sides unbordered, explanate, slightly channeled. Basal angles rounded off, barely produced backwards. Base laterally barely concave, almost straight, faintly though distinctly bordered. Surface near base with a very shallow transverse impression. Microreticulation fine, though distinct, isodiametric to somewhat irregular, rather coriaceous, puncturation rather sparse, moderately fine, difficult to detect within microreticulation, surface with some faint irregular strioles, somewhat coriaceous, densely pilose, dull.

Elytra (Figs 302, 454). Moderately elongate, depressed, in basal two thirds parallel, then gently narrowed near apex. Apex rather wide, faintly oblique, truncature feebly convex, apical angles shortly rounded. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 5 or 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, though distinct, isodiametric to slightly transverse, not coriaceous, puncturation fairly coarse, moderately dense, punctures somewhat rasp-like. Surface densely pilose, rather dull.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, faintly rounded off, shortly setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface densely punctate and pilose.

Legs. Elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, anterior plate only at apex distinctly overlapping the groove, posterior border of groove sharp. Femur moderately wide. Metatibia narrow and elongate, almost 6 × as long as wide, 1st tarsomere of metatarsus >2.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 115e-k). Genital ring rather narrow and elongate, triangular, slightly asymetric, with narrow base. Sternum VII moderately wide, apically rather deeply excised, basally bisinuate, lateral parts small. Aedeagus medium-sized, rather depressed, narrow, rather symmetric. Lower surface almost straight. Apex rather wide, rounded off. Orifice elongate, internal sac fairly complex, with a small fold near apex. Both parameres rather narrow and elongate, both with rounded apex, left considerably larger than right.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype collected in May.

Distribution (Fig. 607). Northern Part of Northern Territory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the yellow colour.

Adelotopus piceus, spec. nov.

Figs 116, 303, 455, 608

Types. Holotype: ♂, WAM Goldfields Surv. 12/1981 Bungalbin Hill, W. F. Humphreys et al. BHR 2 E. *Salmonophloia* woodland, 30°18'S. 119°43'E pit Fall(s) (ANIC).

Diagnosis. Medium-sized, fairly elongate, depressed, dull, reddish-piceous species with darker head and lighter margins of pronotum and elytra, with explanate, rounded margin of pronotum. Further distinguished from relative species by obtuse basal angles of pronotum, and fairly wide, somewhat widened aedeagus.

Description

Measurements. Length: 5.9 mm. Ratios. Width/length of pronotum: 1.80; width base/apex of pronotum: 1.63; width pronotum/head: 1.71; length/width of elytra: c. 1.40; length elytra/pronotum: 2.60.

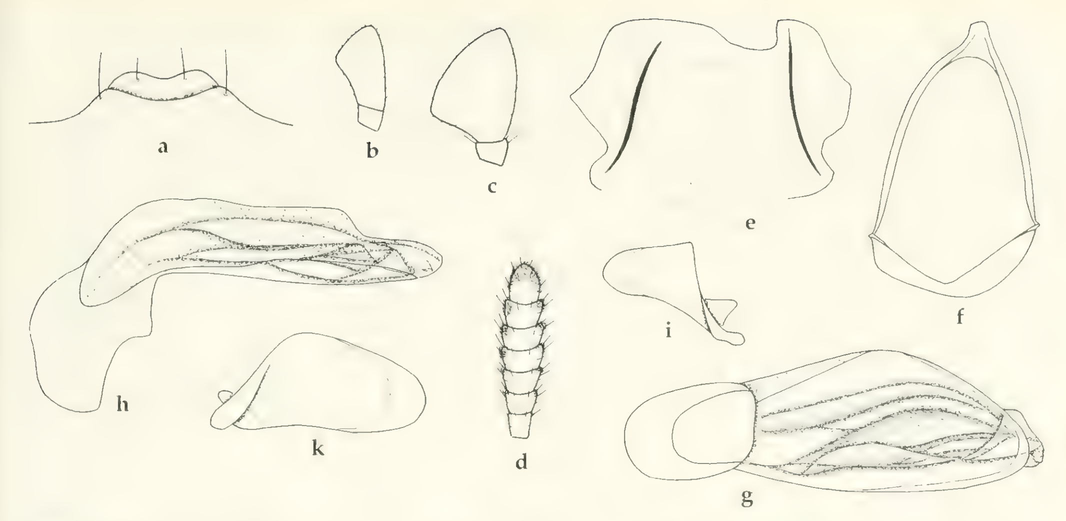
Colour. Head piceous, pronotum and elytra reddish-piceous, margin of pronotum and lateral border of elytra reddish translucent. Lower surface, mouth parts, antennae, and legs dark reddish.

Head (Figs 116a-d). Short and rather wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum narrow, apex concave. Antennal groove laterally bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly wide, gently securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna moderately short, 8th-9th antennomeres slightly $<1.5 \times$ as wide as long. Microreticulation fine, though distinct, isodiametric, puncturation rather sparse, very fine, rather difficult to detect, surface with a shallow sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of short setae. Suborbital field almost impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 303). Rather wide, moderately depressed, base fairly wide, apex rather narrow. Apical angles rather produced, fairly acute, slightly surpassing posterior boder of eyes. Apex deeply, rectangularly excised, rather convex in excision, unbordered. Sides strongly curved throughout, widest in basal third. Margins unbordered, fairly explanate, slightly channeled. Basal angles rounded off, barely produced backwards. Base slightly concave, laterally faintly bordered. Surface near base with a very shallow transverse impression. Microreticulation fine, though distinct, isodiametric, slightly coriaceous, puncturation moderately dense and fine, rather distinct, surface with several faint irregular strioles, slightly coriaceous, impilose, rather dull.

Elytra (Figs 303, 455). Fairly elongate, depressed, in basal two thirds parallel, then gently narrowed to apex. Apex rather wide, faintly oblique, truncature faintly concave, apical angles rounded off. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation rather fine, distinct, isodiametric, not coriaceous, more conspicuous than on fore body, puncturation distinct, moderately dense, apically punctures slightly rasp-like. Surface sparsely pilose, rather dull.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow,



Figs 116a-k. *Adelotopus piceus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

straight, faintly rounded off, shortly setose. Metepisternum moderately elongate, slightly <2 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Fairly elongate, 1st tarsomere of protarsus c. as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove very sharp. Femur moderately wide. Metatibia rather elongate, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 116e-k). Genital ring rather narrow, slightly asymetric, with narrow, deeply excised base. Sternum VII moderately wide, apically deeply excised, basally almost straight, lateral parts short. Aedeagus medium-sized, rather depressed, in middle moderately widened, slightly asymmetric. Lower surface gently convex. Apex wide, rounded off. Orifice rather short, internal sac fairly complex, with a small fold near apex. Both parameres large and wide, with widely rounded apex, left considerably larger than right, right short.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Holotype collected in December in pit fall trap in *Salmonophloia* woodland.

Distribution (Fig. 608). Interior of southwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the reddish-piceous color.

Adelotopus longus, spec. nov.

This species occurs in a southern and a northern subspecies that vary by minor differences in shape of pronotum and elytra, degree of microsculpture, and shape of aedeagus and parameres.

Diagnosis. Medium-sized, elongate, fairly convex, glossy, reddish species with moderately explanate, rectangular, posteriorly not produced basal angles of pronotum. Further distinguished from relative species by reduction of microreticulation and convex apex of aedeagus.

Adelotopus longus longus, subspec. nov.

Figs 117, 304, 456, 608

Types. Holotype: ♂, Biggenden, Q. XII.1973, H. Frauca (ANIC). – Paratypes: 3♂♂, 7♀♀, same data (ANIC, CBM); 3♂♂, 2♀♀, Biggenden Qld, 5.Jan 1972, H. Frauca (ANIC); 1♀, Australia, Nanango Q. S., 6.XII.86, K. Houston (CMC); 1♀, 15 km n. Goomeri, s. Qld., Australien, 23.1.1982, M. Baehr (CBM); 1♀, 20 km n. Biggenden, s. Qld., Australien, 22.1.1982, M. Baehr (CBM); 1♀, 122, *castaneus* Masters, *castaneus*, Gayndah of Aust. Mus 1.3.04 (ANIC); 3♂♂, Aus. Q., 16.XI.86, Gayndah, V. R. Bejsak, legt. (CBS, MMS); 1♂, Australien, Qld G 38, Raglan Ck., 10 km nw. Mt. Larcom, 21.11.1990, leg. R. Gerstmeier (CBM); 1♂, Biloela 3.12.46, A. R. Bird (UQIC); 1♂, Rockhampton, det. *castaneus* (SAMA); 1♂, Rock. J. Sedlacek Collector (CSB); 1♂, 4♀♀, Australia: Qld Rockhampton 26-27.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♂, Australia: Q. Edungalba 19, J. Sedlacek Collector (CSB); 1♂, Queensland: Roma, 20.1.1978, J. Sedlacek Collector (CSB); 1♂, Australien, Qld 27, Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd., 12.11.1990, M. Baehr (CBM); 1♀, Peak Downs, Q., rec. from W. du Boulay (NMV); 1♂, 80501, Goedffroy Collection, *Adelotopus castaneus* (Casteln.) Peak Downs, Queens. (NMV); 1♀, 15, Queensland dedit Mac Leay 1877, *Adelotopus castaneus* Casteln. Queensland D. Macl. 1877, nec *castaneus* Cast. det. Gestro (MCSN); 1♀, Queensland W. Mc Leay, *castaneus* Casteln., Ex Musaeo Chaudoir (MNHN); 2♀♀, Nov. Holl., 10 518, det. *castaneus* (NHRS); 2♀♀, W. Australia, C. French's Coll. 5.11.08, *Adelotopus castaneus* (Castl.) W. Australia, *brunneus* Cast. ?, *A. castaneus* (NMV).

Diagnosis. Distinguished from northern subspecies *A. longus tropicus* by narrower pronotum and elytra, convex rather than concave basal border of pronotum, less dense puncturation on pronotum and elytra, narrower aedeagus, and narrower parameres.

Description

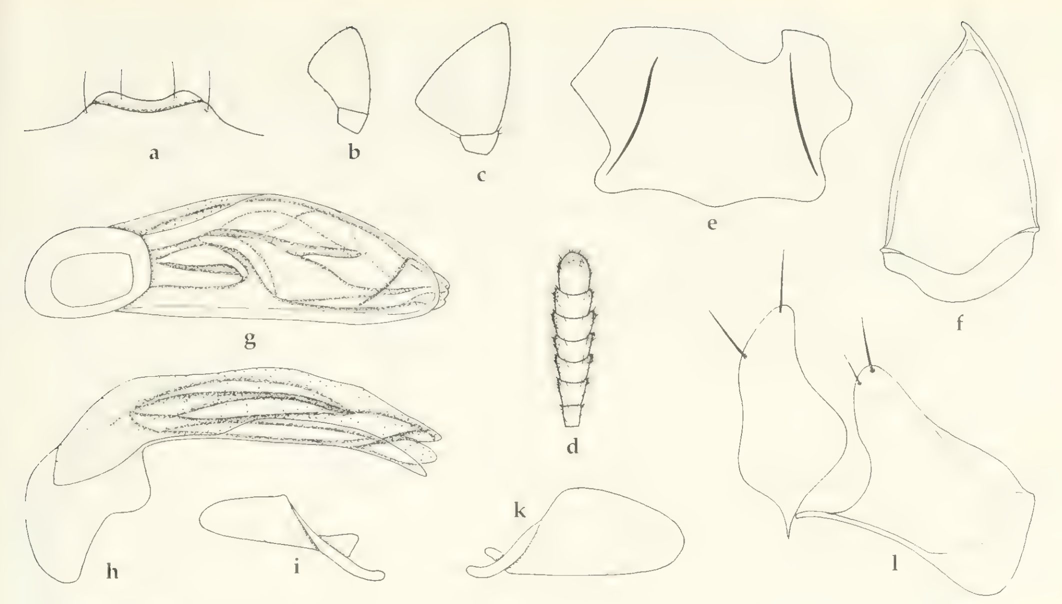
Measurements. Length: 5.6-6.5 mm. Ratios. Width/length of pronotum: 1.63-1.69; width base/apex of pronotum: 1.48-1.55; width pronotum/head: 1.57-1.65; length/width of elytra: 1.51-1.55; length elytra/pronotum: 2.55-2.65.

Colour. Reddish, head and centre of pronotum slightly darker. Lower surface, mouth parts, antennae, and legs reddish.

Head (Figs 117a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle widely rounded off, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum rather narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly wide, gently securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather short, 8th-9th antennomeres slightly $<2\times$ as wide as long. Microreticulation extremely fine, highly superficial, almost invisible, puncturation fine, rather dense, distinct, surface with a shallow sulcus medially of eyes and some faint strioles, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field finely punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 304). Moderately wide, moderately convex, base fairly wide, apex rather narrow. Apical angles rather produced, fairly acute, slightly surpassing posterior border of eyes. Apex deeply, rectangularly excised, rather convex in excision, laterally faintly bordered. Sides moderately curved, almost straight in front of basal angles, widest in basal third. Margins unbordered, fairly explanate, slightly channeled. Basal angles almost rectangular, at apex obtuse, barely produced backwards. Base slightly convex, laterally faintly bordered. Surface near base with or without a very shallow transverse impression. Microreticulation extremely superficial, almost invisible, puncturation moderately dense and fine, distinct, surface with several faint irregular strioles, sometimes fairly coriaceous, very sparsely pilose, moderately to fairly glossy.

Elytra (Figs 304, 456). Elongate, moderately convex, in basal two thirds markedly parallel, then gently narrowed to apex. Apex rather wide, transverse, truncature convex, apical angles rounded off. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation extremely



Figs 117a-l. *Adelotopus longus longus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

superficial, barely visible even under high magnification, puncturation distinct, moderately dense. Surface sparsely pilose, glossy.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow, straight, faintly rounded off, shortly setose. Metepisternum rather elongate, c. 2 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Fairly elongate, 1st tarsomere of protarsus c. as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur moderately wide. Metatibia rather elongate, >5 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 117e-k). Genital ring rather narrow, slightly asymetric, arms evenly convex, with rather narrow, excised base. Sternum VII moderately wide, apically deeply excised, basally bisinuate, lateral parts short. Aedeagus medium-sized, rather depressed, in middle slightly widened, slightly asymmetric. Lower surface faintly bisinuate. Apex wide, rounded off. Orifice rather short, internal sac fairly complex, with a small fold near apex. Both parameres rather elongate, with widely rounded apex, left considerably larger than right.

♀ genitalia (Fig. 117l). Stylomere triangular, moderately wide, apex rather wide, obliquely rounded off, with 2-3 subapical setae. Lateral plate rather elongate, with 2 apical setae.

Variation. Little variation of relative length of pronotum and elytra and of distinctness of microsculpture noted.

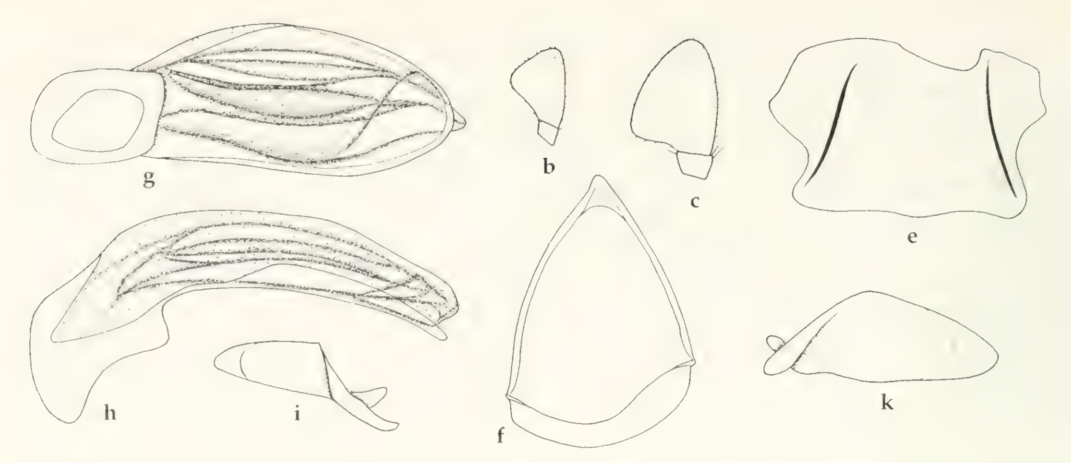
Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of different gum-like eucalypts. So far captured from November to January, and in March.

Distribution (Fig. 608). Southeastern Queensland north to somewhat north of Rockhampton. Two old specimens from "W. Australia" certainly wrongly labelled.

Material examined (43). Only the type series.

Etymology. The name refers to the elongate shape.



Figs 118b-c, e-k. *Adelotopus longus tropicus*, subspec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Adelotopus longus tropicus, subspec. nov.

Figs 118, 305, 457, 608

Types. Holotype: ♂, Charters Towers Qld, 13.XII.1976, B. B. Lowery (ANIC). – Paratypes: 1♂, Australia, Qld. 17-20 mi W. Atherton, 1.II.1975, H. & A. Howden (ANIC); 1♀, 3.7 km E Chillagoe, 13-V-1987, P. A. Meyer coll., Under bark of gum-type eucalypt (CBM); 1♀, Australia, Qld 93/67, Einasleigh R. b. Carpentaria Downs, 12.-13.6.1993, M. Baehr (CBM); 2♂♂, Australia, Qld 93/64, Einasleigh R. 2 km e. Einasleigh, 11.-12.6.1993, M. Baehr (CBM); 1♂, Mareeba: NQ Davies Ck. Rd, 22.Feb.1972, A. & M. Walford-Huggins 5856 (CMP-WHC); 1♂, M[t] Molloy Queensland, F. H. Taylor, *Adelotopus bimaculatus* Macl. (ANIC); 1♂, Cooktown, N.Q., May 1951, C. Oke (NMV).

Diagnosis. Distinguished from southern subspecies *A. longus longus* by wider pronotum and elytra, concave rather than produced basal border of pronotum, denser puncturation on pronotum and elytra, wider aedeagus, and wider parameres.

Description

Measurements. Length: 5.6-6.5 mm. Ratios. Width/length of pronotum: 1.66-1.74; width base/apex of pronotum: 1.58-1.62; width pronotum/head: 1.69-1.74; length/width of elytra: 1.45-1.53; length elytra/pronotum: 2.45-2.54.

Colour. Similar to nominate subspecies.

Head (Figs 118b,c). Similar to nominate subspecies, though palpi slightly narrower, puncturation even denser, and microreticulation usually even less distinct.

Pronotum (Fig. 305). Generally similar to nominate subspecies, though comparatively wider, laterally more evenly curved, especially near base, basal angle more produced backwards, and base perceptible concave. Surface with denser puncturation, microreticulatuion almost invisible.

Elytra (Figs 305, 456). Generally similar to nominate subspecies, though elytra slightly shorter and wider, less parallel, Microreticulation even less distinct, almost invisible, and puncturation slightly coarser and denser, hence surface even faintly glossier.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia (Figs e-k). Largely similar to nominate subspecies, but genital ring wider, aedeagus slightly wider, and both parameres also wider, at apex more widely rounded off.

♀ genitalia. Similar to nominate subspecies.

Variation. Generally little variation noted in relative shape of pronotum and elytra and degree of puncturation of surface, but there is one specimen from Einasleigh River, North Queensland, collected together with two normal-shaped specimens that has at the same time a wider pronotum, considerably

shorter elytra, a remarkably wide genital ring, an unusually short and wide aedeagus with widely rounded apex, and narrower and more elongate parameres (Figs). More material is required to decide, whether this specimen represents a nomenclatorial valuable taxon, e.g a subspecies or even an independent species, or is merely an example of unusual strong variation.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of river gums near large river, a specimen collected by P. Meyer "under bark of gum-type eucalypt". So far captured in February, May, June, and December.

Distribution (Fig. 608). Northeastern Queensland from about Townsville to Cooktown.

Material examined (10). The type series and one additional specimen that has been not included in the type series because of certain remarkable structural differences: 1♂, Australia, Qld 93/64, Einasleigh R. 2 km e. Einasleigh, 11.-12.6.1993, M. Baehr (CBM).

Etymology. The name refers to the northern distribution of this subspecies.

Adelotopus sinuaticollis, spec. nov.

This species occurs in a southern and a more northern subspecies that vary by minor differences in shape of pronotum and elytra, degree of microsculpture, and shape of ♀ stylomeres.

Diagnosis. Medium-sized, rather elongate, fairly convex, more or less dull, rusty reddish species with moderately explanate, rectangular, distinctly produced margin of pronotum. Further distinguished from relative species by presence of microreticulation and acute apex of aedeagus.

Adelotopus sinuaticollis sinuaticollis, subspec. nov.

Figs 119, 306, 458, 609

Types. Holotype: ♂, Sea Lake Goudie, E. W. Ferguson Collection, *Adelotopus* (ANIC). – Paratypes: 1♀, Adelaide Coll. Castelnau, det. *aphodioides* (MCSN) [marked "s", mounted with 2 paratypes of *s. sinuaticollis*, spec. nov. on same card]; 2♀♀, Lea's, *Adelotopus* sp. ?, Id. by T. G. Sloane, Sea Lake Goudie (SAMA); 1♂, 1♀, Sea Lake Goudie, *Adelotopus aphodioides* Westw, J C Goudie Collection (NMV); 1♂, 2♀♀, Woorinen. V., 5.1.36, F. E. Wilson, F. E. Wilson Collection, Host *Iridomyrmex detectus* (NMV); 4♂♂, 2♀♀, Morilla N. S. W. (ANIC, CBM); 1♂, 4♀♀, Australia N. S. W., M. F. L. (BMNH, CBM); 1♀, 1 (sex?), *castaneus* Cast., Gayndah, *Adelotopus castaneus* Cast. Queensland 3889 (SAMA); 1♂, Aust. (OUM); 2♂♂, K. 12375, *Adelotopus castaneus* Casteln. Gayndah (AMS); 1♂, E. W. Ferguson Collection (ANIC).

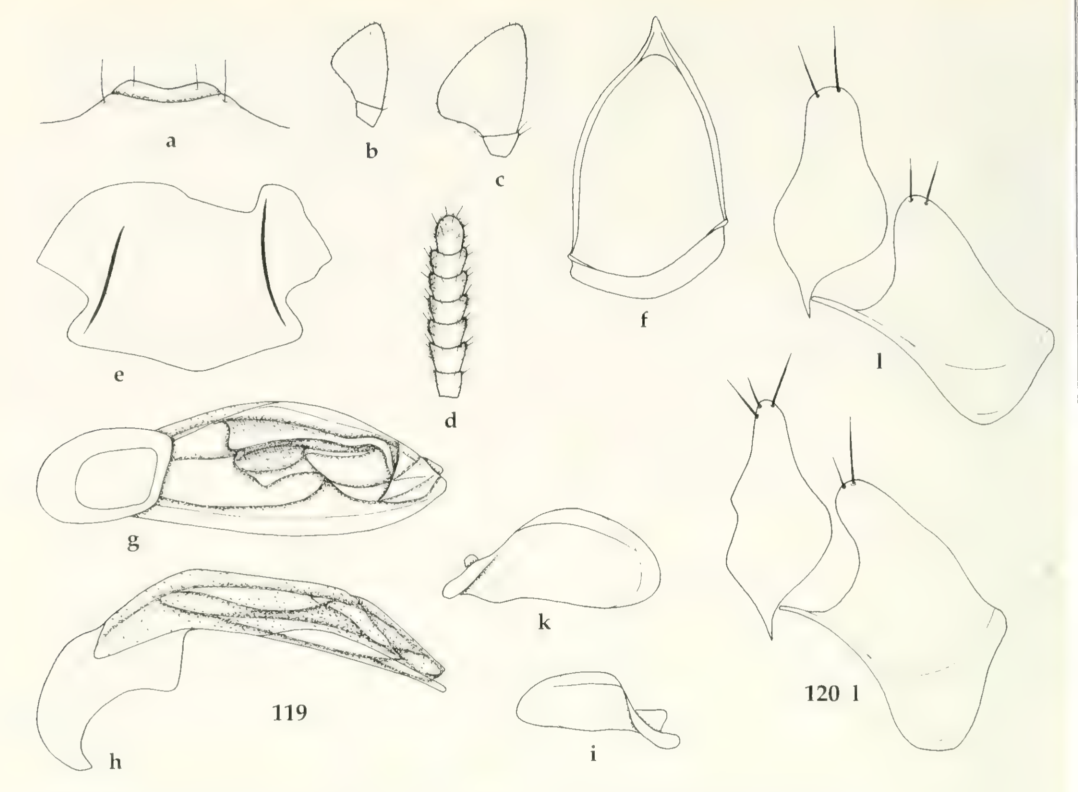
Diagnosis. Distinguished from northern subspecies *A. sinuaticollis calliope* by slightly wider pronotum and elytra, coarse instead of superficial microreticulation of pronotum, coarser puncturation on pronotum and elytra, and wider ♀ stylomere with wider apex.

Description

Measurements. Length: 5.70-6.55 mm. Ratios. Width/length of pronotum: 1.64-1.72; width base/apex of pronotum: 1.53-1.60; width pronotum/head: 1.66-1.69; length/width of elytra: 1.38-1.45; length elytra/pronotum: 2.36-2.40.

Colour. Upper and lower surface, mouth parts, antenna, and legs rusty red, sometimes head faintly darker.

Head (Figs 119a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle widely rounded off, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum rather narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus wide, markedly securiform. Terminal palpomere of labial palpus very wide, extremely securiform. Antenna



Figs 119a-l. *Adelotopus sinuaticollis sinuaticollis*, spec. nov. Details of head and genitalia.
Fig. 120l. *Adelotopus sinuaticollis calliope*, subspec. nov. Details of ♀ genitalia. For legends see fig. 100.

moderately short, 8th-9th antennomeres c. 1.5 × as wide as long or faintly wider. Microreticulation fine, though distinct, puncturation fine, rather dense, more or less easily visible, surface with a shallow sulcus medially of eyes and some faint strioles, impilose, rather dull. Ventrolaterally of eyes with a row of short setae. Suborbital field almost impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 306). Moderately wide, moderately convex, base fairly wide, apex rather narrow. Apical angles rather produced, fairly acute, slightly surpassing posterior boder of eyes. Apex deeply, rectangularly excised, rather convex in excision, laterally faintly bordered. Sides rather curved throughout, widest in basal third. Margins unbordered, fairly explanate. Basal angles almost rectangular, at apex barely obtuse, distinctly produced backwards. Base laterally distinctly sinuate, in middle slightly produced, laterally faintly bordered. Surface near base without transverse impression. Microreticulation fine though very distinct, sometimes even coarse, puncturation moderately dense and fine, more or less distinct, surface with rather dense network of irregular strioles, usually distinctly coriaceous, impilose, dull.

Elytra (Figs 306, 458). Rather elongate, moderately convex, in basal two thirds almost parallel, then gently narrowed to apex. Apex rather wide, transverse, truncature convex, apical angles rounded off. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 (sometimes unilaterally 7 or even 8) pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, isodiametric, fairly distinct, though much more superficial than on fore body, puncturation distinct, moderately dense. Surface impilose, moderately glossy.

Lower surface. Prosternal process rather elongate, narrow, straight, depressed, apex narrow,

straight, faintly rounded off, shortly setose. Metepisternum rather elongate, slightly <2 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur moderately wide. Metatibia elongate, almost 6 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 119e-k). Genital ring moderately wide, slightly asymmetric, arms evenly convex, with rather narrow base. Sternum VII moderately wide, apically deeply excised, basally gently triangular, lateral parts rather short. Aedeagus medium-sized, rather depressed, in middle widened, almost symmetric. Lower surface almost straight. Apex narrow, obtuse. Orifice rather short, internal sac fairly complex, with a small fold near apex. Both parameres large, with fairly rounded apex, left considerably larger than right. Both parameres with a distinct edge in upper quarter of outer surface.

♀ genitalia (Fig. 119l). Stylomere triangular, moderately wide, apex wide, rounded off, with 2-3 subapical setae. Lateral plate rather elongate, with 2-3 apical setae.

Variation. Little variation noted in relative shape of pronotum and elytra.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Unknown. This species is exclusively known from old specimens, no specimen is dated and the locality labels are rather inaccurate.

Distribution (Fig. 609). Southeastern Australia from eastern South Australia through Victoria, eastern New South Wales, and southeastern Queensland north to Gayndah.

Material examined (26). Only the type series.

Etymology. The name refers to the sinuate basal margin of the pronotum.

Adelotopus sinuaticollis calliope, subspec. nov.

Figs 120, 307, 459, 609

Types. Holotype: 1♀, Australien, Qld 50, Calliope River 27 km se. Mt. Larcom, 20.11.1990, M. Baehr (ANIC).

Diagnosis. Distinguished from southern nominate subspecies *A. sinuaticollis sinuaticollis* by slightly narrower pronotum and elytra, superficial instead of coarse microreticulation of pronotum, finer puncturation on pronotum and elytra, and narrower stylomere with narrower apex.

Description

Measurements. Length: 6.55 mm. Ratios. Width/length of pronotum: 1.62; width base/apex of pronotum: 1.51; width pronotum/head: 1.63; length/width of elytra: 1.46; length elytra/pronotum: 2.41.

Colour. Reddish, though head and centre of pronotum perceptibly darker, piceous.

Head. Generally similar to nominate subspecies, though microreticulation and puncturation finer.

Pronotum (Fig. 307). Similar to nominate subspecies in shape, though apical and basal margin with more distinct borders. Microreticulation fine and rather superficial. Puncturation finer, though more easily visible due to faint microreticulation and to much more superficial striolation. Surface not at all coriaceous, but moderately glossy.

Elytra (Figs 307, 459). Similar to nominate subspecies, though microreticulation more superficial and puncturation perceptibly finer, hence surface fairly glossy. In the single specimen elytra with 6 umbilical pores on both sides.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies, though posterior legs even longer.

♂ genitalia. Unknown.

♀ genitalia (Fig. 120l). Stylomere triangular, rather narrow, apex narrow, rounded off, with 2-3 subapical setae. Lateral plate rather elongate, with a longer and a shorter apical seta.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Holotype collected under bark of large river eucalypt, together with several other *Adelotopus* species.

Distribution (Fig. 609). Central eastern Queensland near Gladstone. Known only from type locality. Occurs almost 200 km north of the northernmost known locality of the nominate subspecies.

Material examined (1). Only the holotype.

Etymology. The name refers to the type locality, the Calliope River.

Adelotopus bamagae, spec. nov.

Figs 121, 308, 460, 608

Types. Holotype: ♂, Bamaga N. Cape York, Q Jan.'58 Darlingtons (MCZ).

Diagnosis. Medium-sized, elongate, fairly depressed, dull, black species with moderately explanate, obtusely rectangular, faintly produced margin of pronotum. Further distinguished from relative species by slightly rasp-like elytral punctures and rather densely pilose surface.

Description

Measurements. Length: 6.65 mm. Ratios. Width/length of pronotum: 1.62; width base/apex of pronotum: 1.59; width pronotum/head: 1.67; length/width of elytra: 1.59; length elytra/pronotum: 2.56.

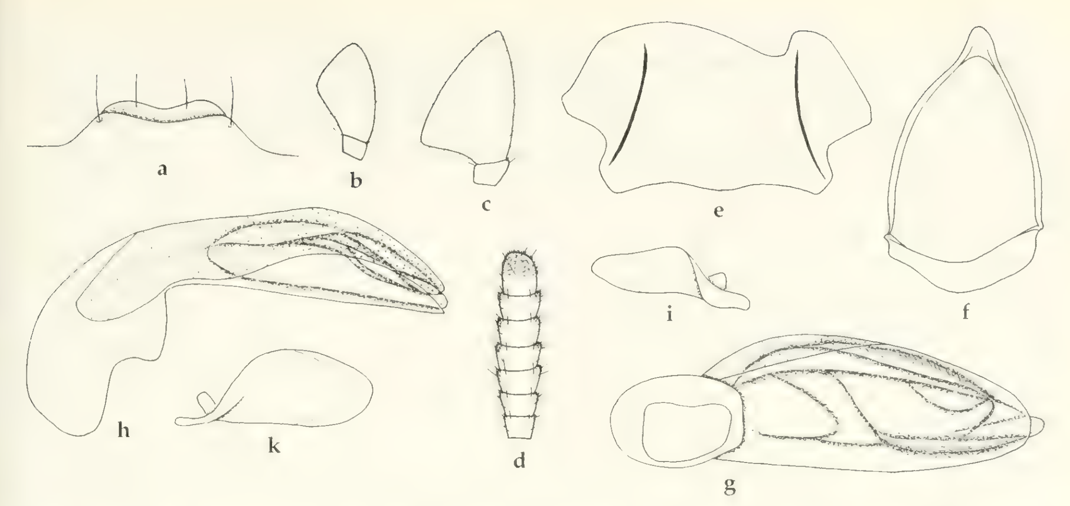
Colour. Dull black, lateral margin of pronotum feebly reddish translucent. Lower surface reddish-piceous. Mouth parts, antennae, and legs dark reddish to reddish-piceous.

Head (Figs 121a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle widely rounded off, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle interrupted. Labrum rather narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation very fine, fairly distinct, puncturation very fine, rather dense, though easily visible, surface with a shallow sulcus medially of eyes and some faint strioles, sparsely pilose, rather dull, somewhat silky. Ventrolaterally of eyes with a row of short setae. Suborbital field at least laterally faintly punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 308). Moderately wide, moderately convex, base fairly wide, apex rather narrow. Apical angles rather produced, fairly acute, slightly surpassing posterior border of eyes. Apex deeply, rectangularly excised, rather convex in excision, laterally faintly bordered. Sides rather curved throughout, widest in basal third. Margins faintly bordered, fairly explanate. Basal angles c. 100°, at apex obtuse, feebly produced backwards. Base laterally faintly sinuate, in middle slightly produced, faintly bordered. Surface near base with a shallow, transverse impression. Microreticulation fine though rather distinct, puncturation dense, distinct, laterally less dense, though somehwat rasp-like, surface with several fine, irregular strioles, rather densely pilose, rather dull, somewhat silky.

Elytra (Figs 308, 460). Elongate, moderately convex, on disk rather depressed, in basal two thirds almost parallel, then gently narrowed to apex. Apex rather wide, transverse, truncature convex, apical angles rounded off. Shoulders rather distinct, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, isodiametric, fairly distinct, somewhat superficial, puncturation rather fine though very distinct, rather sparse, punctures distinctly rasp-like. Surface densely pilose, moderately glossy, somewhat silky.

Lower surface. Prosternal process rather elongate, narrow, straight, behind coxae almost keeled, apex narrow, straight, faintly rounded off, shortly setose. Metepisternum elongate, c. 2.2 × as long as



Figs 121a-k. *Adelotopus bamagae*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur moderately wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus slightly >2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 121e-k). Genital ring fairly wide, rather asymmetric, arms evenly convex, with rather narrow base. Sternum VII rather wide, apically convex, rather deeply excised, basally bisinuate, lateral parts rather short. Aedeagus medium-sized, moderately depressed, in middle fairly widened, slightly asymmetric. Lower surface straight. Apex wide, widely rounded. Orifice rather short, internal sac fairly complex. Both parameres rather narrow, with obtusely rounded apex, left considerably larger than right.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype collected in January.

Distribution (Fig. 608). North Queensland, extreme tip of Cape York Peninsula. Known only from type locality.

Material examined (1). Only the holotype.

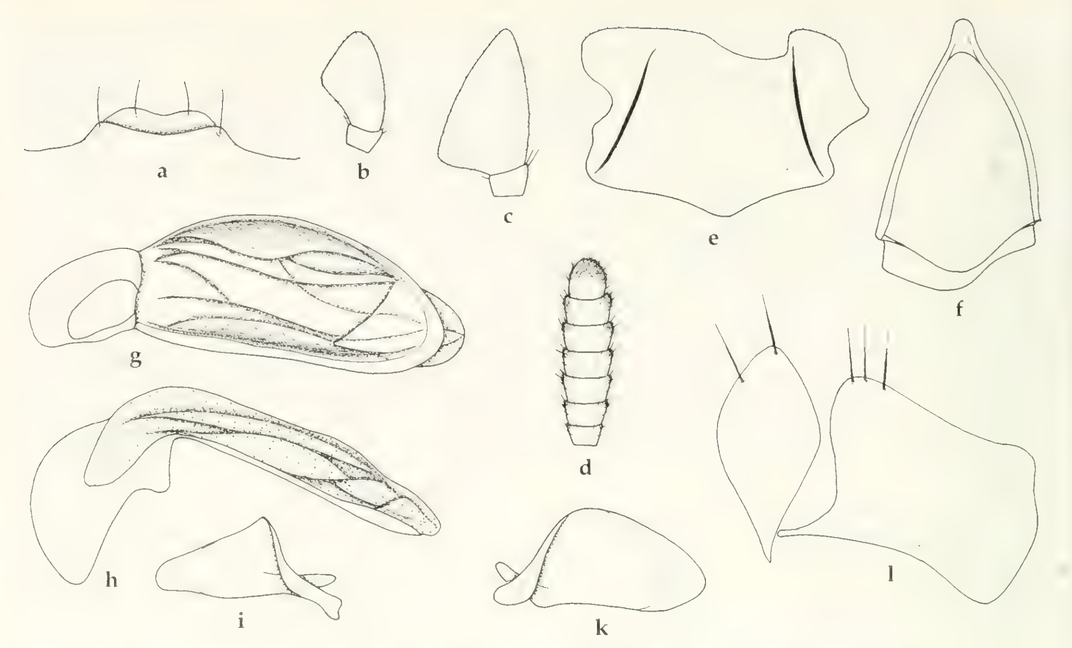
Etymology. The name refers to the type locality.

Adelotopus edithae, spec. nov.

Figs 122, 309, 462, 609

Types. Holotype: ♂, Australia, NT 95/47, 5 km e. Edith River Cr., 27.-28.8.1995, M. Baehr (MNTD). – Paratypes: 2♂♂, same data (CBM); 1♀, 12.40S, 132.54E Jabiru NT 5-9 Jul.1977 R. Pengilly, pitfall trap (MNTD); 1♂, Australia, NT 95/9, Litchfield NP, 30 km w. Batchelor, 6.8.1995, M. Baehr (CBM).

Diagnosis. Medium-sized, rather short, convex, dull piceous- black species with barely explanate, obtusely rectangular margin of pronotum. Further distinguished from relative species by extremely fine, slightly rasp-like elytral puncturation, densely, though extremely shortly pilose surface, laterally strongly bordered and near apex excised prosternal process, and moderately wide, somewhat shoe-like aedeagus with rounded apex.



Figs 122a-l. *Adelotopus edithae*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 4.80-6.15 mm. Ratios. Width/length of pronotum: 1.76-1.78; width base/apex of pronotum: 1.57-1.64; width pronotum/head: 1.66-1.72; length/width of elytra: 1.26-1.35; length elytra/pronotum: 2.27-2.42.

Colour. Dull piceous-black, lateral margins of pronotum and elytra indistinctly dark reddish translucent. Lower surface dark piceous. Mouth parts, antenna, and legs dark reddish-piceous.

Head (Figs 122a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle widely rounded off, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle widely interrupted. Labrum rather narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation very fine, though distinct, regular, puncturation extremely fine, rather sparse, surface with a shallow sulcus medially of eyes only, apparently impilose, very smooth, though fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field at least laterally faintly punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 309). Rather wide, convex, base fairly wide, apex rather narrow. Apical angles moderately produced, fairly acute, slightly surpassing posterior border of eyes. Apex rather deeply, rectangularly excised, rather convex in excision, very inconspicuously bordered. Sides curved throughout, widest in basal third. Margins unbordered, barely explanate. Basal angles c. 100°, at apex obtusely rounded, feebly produced backwards. Base irregularly concave, in middle faintly produced, very inconspicuously bordered. Surface near base with a very shallow, transverse impression. Microreticulation fine, though distinct, puncturation fine and rather dense, moderately distinct, surface with several short, irregular strioles, densely though very shortly pilose, rather dull.

Elytra (Figs 309, 462). Rather short, convex throughout, basally almost parallel, then gently narrowed to apex. Apex rather wide, slightly oblique, truncature apparently faintly concave, apical

angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel very narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation very fine, isodiametric, slightly superficial, puncturation very fine though distinct, rather dense, punctures faintly rasp-like, especially towards apex. Surface rather densely pilose, moderately glossy, silky, pilosity extremely short.

Lower surface. Prosternal process rather elongate, narrow, straight, anteriorly depressed, laterally strongly bordered, surface behind coxae remarkably concave, apex narrow, straight, rectangular, very shortly setose. Metepisternum rather elongate, slightly <2 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather densely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur rather wide. Metatibia rather elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus slightly >2 × as long as wide. ♂ protarsus unknown.

♂ genitalia (Figs 122e-k). Genital ring fairly wide, highly asymmetric, left arm straight, right convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically rather deeply excised, basally markedly bisinuate, lateral parts triagonal, rather elongate. Aedeagus medium-sized, moderately depressed, in middle rather vwidened, asymmetric, shoe-like. Lower surface straight. Apex wide, rounded. Orifice elongate, internal sac fairly complex. Both parameres rather large, triangular, with narrowly rounded apex, left considerably larger than right.

♀ genitalia (Fig. 122l). Stylomere short and wide, markedly triagonal, apex obtuse, with 2-3 subapical setae. Lateral plate elongate, with 3 apical setae.

Variation. Some variation noted in size and relative shape of pronotum.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of gum-type eucalypts (*E. alba* or *E. bigalerita*). Female paratype collected in "pitfall trap". So far captured in July and August.

Distribution (Fig. 609). Eastern and southern margins of Arnhem Land, northern part of Northern Territory.

Material examined (5). Only the type series.

Etymology. The name refers to the type locality.

Adelotopus rufozonatus, spec. nov.

Figs 33, 123, 310, 461, 608

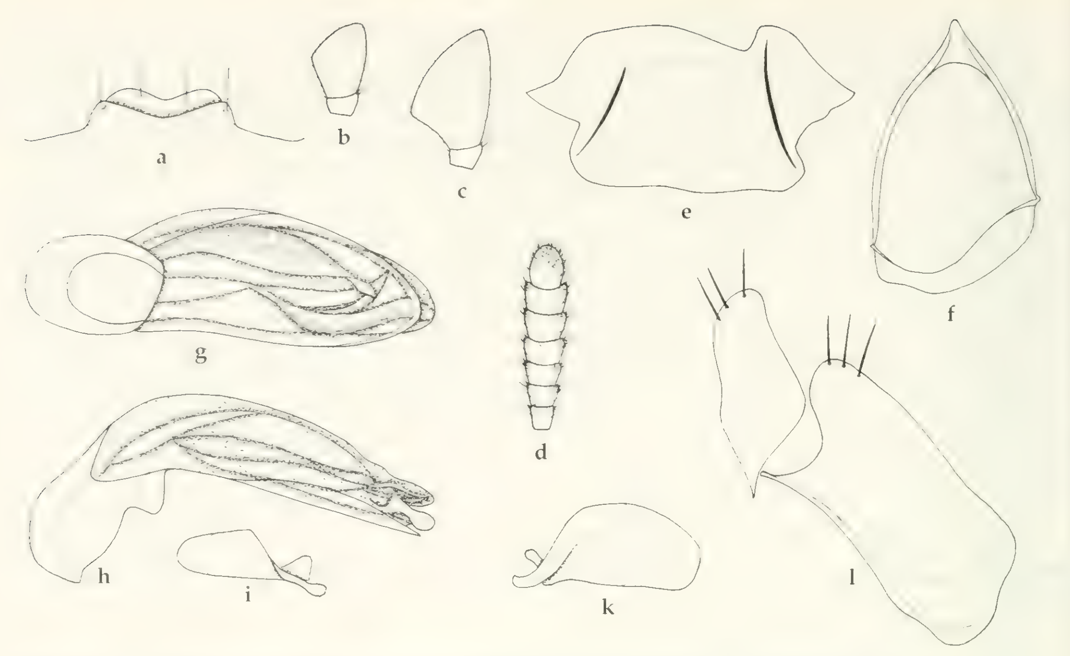
Types. Holotype: ♂, Fly Ck., 37 km S. of Darwin, N. T. 4.II.1979 R. Piper (QMB T26068). – Paratypes: 2♂♂, Port Darwin N. Territory (MMS); 1♂, 1♀, Port Darwin end'09 (ANIC); 1♂, G. F. Hill, Kodpenyay (?) ~~Darwin~~, N. T. (SAMA); 1♂, Australien, NT, Mary River, 110 km e. Darwin, 1.11.1984, M. & B. Baehr (CBM); 3♂♂, 4♀♀, Australia, NT 95/48, 30 km n. Edith River Cr., 28.8.1995, M. Baehr (CBM); 1♂, Australia, NT 95/11, Edith River Cr., 60 km n. Katherine, 6.-7.8.1995, M. Baehr (CBM); 5♂♂, 2♀♀, Australia, NT 95/47, 5 km e. Edith River Cr., 27.-28.8.1995, M. Baehr (CBM, MNTD, QMB, ZSM); 1♂, 2♀♀, Katherine N. T. IV-77, J. Sedlacek Collector (CBM, CSB).

Diagnosis. Medium-sized, moderately elongate, fairly depressed, black species with broad red band across basal ⅗ of elytra, and moderately explanate, obtusely rectangular, faintly produced margin of pronotum. Further distinguished from relative species by slightly rasp-like elytral punctures and rather densely pilose surface.

Description

Measurements. Length: 5.65-7.55 mm. Ratios. Width/length of pronotum: 1.62-1.71; width base/apex of pronotum: 1.41-1.62; width pronotum/head: 1.55-1.77; length/width of elytra: 1.51-1.68; length elytra/pronotum: 2.57-2.78.

Colour (Figs 33, 310). Piceous black to black, margins of pronotum and elytra and basal ⅗ to ⅔ of



Figs 123a-l. *Adelotopus rufozonatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

elytra light red. Lower surface reddish, below head and pronotum in parts piceous. Mouth parts, antenna, and legs reddish to reddish-piceous.

Head (Figs 123a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle widely rounded off, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle widely interrupted. Labrum rather narrow, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna moderately short, 8th-9th antennomeres slightly >1.5 × as wide as long. Microreticulation very fine, rather superficial, sometimes difficult to detect, puncturation double, very fine and fairly dense, and coarse, the latter becoming dense towards base, surface with a shallow sulcus medially of eyes and with more or less distinct, sometimes confluent strioles on vertex, densely pilose, moderately glossy, though posteriorly becoming more coriaceous. Ventrolaterally of eyes with a row of short setae. Suborbital field at least laterally faintly punctate and setose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 310). Moderately wide, moderately convex, base fairly wide, apex rather narrow. Apical angles moderately produced, fairly acute, slightly surpassing posterior border of eyes. Apex deeply, rectangularly excised, rather convex in excision, fairly distinctly bordered. Sides rather curved throughout, widest in basal third. Margins unbordered, more or less widely explanate. Basal angles c. 100°, at apex obtuse or narrowly rounded off, feebly produced backwards. Base laterally faintly sinuate, in middle slightly produced, perceptibly bordered. Surface near base with a shallow, transverse impression. Microreticulation very fine, rather superficial, sometimes difficult to detect, puncturation dense, distinct, anteriorly very dense, posteriorly becoming sparser, double, coarse and moderately fine, surface with several short, irregular strioles, apically and on disk rather coriaceous, densely pilose, moderately glossy.

Elytra (Fig 310, 461). Rather elongate, moderately convex, on disk rather depressed, in basal two thirds almost parallel, then gently narrowed to apex. Apex rather wide, transverse, truncature convex,

apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border incomplete, reaching only to middle of base, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae very short. Striae including sutural stria absent. Microreticulation fine, isodiametric, very superficial, difficult to detect, puncturation rather fine though very distinct, moderately dense, punctures distinctly rasp-like. Surface densely pilose, moderately glossy, slightly silky, pilosity fairly elongate.

Lower surface. Prosternal process rather elongate, narrow, straight, apex narrow, straight, faintly rounded off, shortly setose. Metepisternum rather elongate, slightly <2 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for some distance from apex, posterior border of groove sharp. Femur moderately wide. Metatibia rather elongate, >5 × as long as wide, 1st tarsomere of metatarsus slightly >2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 123e-k). Genital ring fairly wide, asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically rather deeply excised, basally almost straight, faintly bisinuate, lateral parts triagonal, rather elongate. Aedeagus medium-sized, moderately depressed, in middle fairly widened, slightly asymmetric. Lower surface straight. Apex wide, widely rounded. Orifice rather short, internal sac fairly complex. Both parameres rather large, with very wide, rounded apex, left considerably larger than right.

♀ genitalia (Fig. 123l). Stylomere rather narrow, barely triagonal, apex obliquely rounded, with 2-3 subapical setae. Lateral plate elongate, with 2-3 apical setae.

Variation. There is considerable variation of size and even more variation of relative width of pronotum and elytra. One extremely narrow and elongate specimen, collected together with two very wide specimens from Katherine, demonstrates the wide range of shape in this species. In other respects all specimens show a high degree of similarity.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of river gum near a tidal river, others under bark of *E. alba* or *E. bigalerita* near a river bed. So far captured in February, April, August, and November.

Distribution (Fig. 608). Northernmost Northern Territory from Darwin to Katherine.

Material examined (25). Only the type series.

Etymology. The name refers to the broad, red band across the elytra.

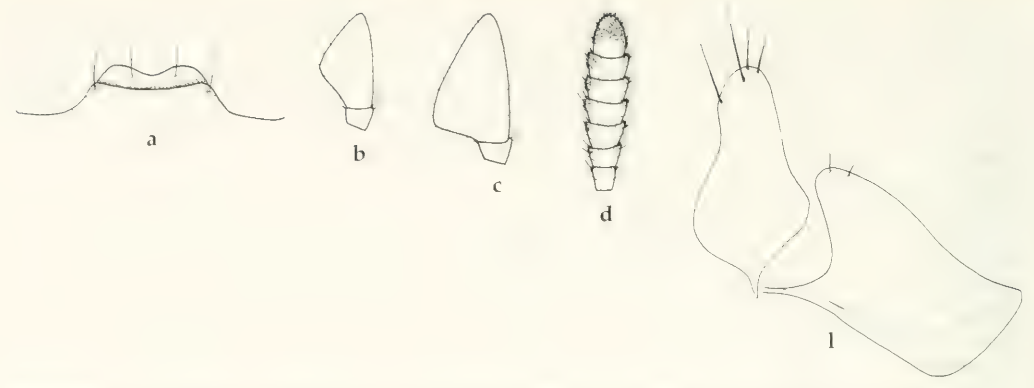
atrorufus-group

Diagnosis. Medium-sized, rather depressed, contrastingly black and red species. Labrum bisetose; glossa c. 10-setose; lateral margin of pronotum only moderately explanate, basal angle shortly rounded off; basal border line of elytra abbreviated, attaining ⅗ of base; scutellar pore absent; lateral margin of elytra without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores only; abdominal sterna without ambulatory setae; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; mesofemur and metafemur wide and depressed, profemur less wide; ♂ genitalia thus far unknown.

Larvae. Unknown.

Distribution. A single species from southwestern New South Wales.

Systematic position. This group is certainly closely related to the *brevipennis*-group, though slightly more apomorphic in the less explanate lateral margins of the elytra and the presence of a contrasting pattern.



Figs 124a-d, l. *Adelotopus atrorufus,* spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Adelotopus atrorufus, spec. nov.

Figs 34, 124, 311, 463, 609

Types. Holotype: ♀, Australia: Coombah N. S. W. 16.XII.72 B. P. Moore (ANIC).

Diagnosis. Medium sized, rather depressed, markedly bicoloured species, that has the forebody black with reddish lateral margins of the pronotum, and the elytra uniformly red.

Description

Measurements. Length: 6.8 mm. Ratios. Width/length of pronotum: 1.76; width base/apex of pronotum: 1.67; width pronotum/head: 1.82; length/width of elytra: 1.42; length elytra/pronotum: 2.56.

Colour (Figs 34, 311). Black, lateral margins and apex of pronotum distinctly reddish translucent. Elytra red. Lower surface of head and prothorax black, rest of lower surface reddish. Mouth parts, antenna, and legs reddish.

Head (Figs 124a-d). Short and wide, moderately depressed. Anterior border but faintly convex, lateral angle rounded, laterally not projecting, lateral borders behind eyes not narrowed. Clypeal suture indistinct, semicircular, in middle widely interrupted. Labrum rather short and wide, apex slightly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with distinct keel, at border with c. 10 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus moderately wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna elongate, 8th-9th antennomeres c. 1.3 × as wide as long. Microreticulation fine, distinct, puncturation extremely fine, moderately dense, difficult to detect, surface with a shallow sulcus medially of eyes, impilose, rather dull. Ventrolaterally of eyes with a row of extremely short setae. Suborbital field at least laterally faintly punctate and setose. Both palpi rather sparsely setose, gula impilose.

Pronotum (Fig. 311). Wide, moderately convex, base very wide, strongly narrowed to apex. Apical angles rather produced, fairly acute, slightly oblique, surpassing posterior third of eyes. Apex moderately deeply excised, rather convex in excision, very finely and irregularly bordered. Sides strongly convex throughout, widest in basal third. Margins rather wide, fairly explanate, faintly bordered. Basal angles shortly rounded off. Base slightly convex, rather coarsely bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, puncturation extremely fine, moderately dense, rather difficult to detect, surface with several very fine, irregular strioles, impilose, rather dull.

Elytra (Figs 311, 463). Short, rather wide, moderately convex, on disk slightly depressed, lateral margins in basal two thirds parallel, though slightly sinuate behind base, apically evenly narrowed. Apex moderately wide, transverse, truncature faintly convex, apical angles widely rounded off. Shoulders rounded off, basal margin almost straight, without setae behind shoulders. Marginal

channel rather wide, almost completely visible from above. Basal border incomplete, present in lateral ⅗ of base, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation fine, slightly superficial, isodiametric, puncturation very fine, moderately sparse, rather difficult to see. Surface impilose, rather dull.

Lower surface. Prosternal process rather short, fairly narrow, straight, convex, apex short and narrow, evenly rounded off, shortly setose. Metepisternum rather short, c. 1.5 × as long as wide, posteriorly not constricted nor hollowed. Abdominal sterna including sternum VI apparently without setae at apical border. Lower surface rather sparsely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur deep, anterior plate distinctly overlapping the groove for basal half, posterior border of groove sharp. Femur rather wide. Metatibia elongate, >6 × as long as wide, 1st tarsomere of metatarsus >2 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 124l). Stylomere rather narrow and elongate, strongly widened towards base, apex evenly rounded, with 3-4 subapical setae. Lateral plate elongate, with 2-3 short apical setae.

Variation. Unknown.

Vivipary. Not confirmed in examined material.

Habits. Unknown. Holotype collected in December.

Distribution (Fig. 609). Southwestern New South Wales.

Material examined (1). Only the holotype.

Etymology. The name refers to the contrasting black and red colouration of pronotum and elytra.

marginicollis-group

Diagnosis. Medium-sized, rather elongate, depressed, yellow or piceous-black species. Labrum bisetose; glossa c. 16-setose; lateral margin of pronotum rather wide, fairly explanate, basal angle shortly rounded or rectangular; basal border line of elytra abbreviated, attaining only middle of base; scutellar pore absent; lateral margin of elytra without elongate setae; series of lateral pores with 6 subhumeral pores and 1 postmedion pore; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; adeagus so far unknown.

Larvae. 1st instar larvae known of 2 species.

Distribution. 3 species in northwestern Queensland, central Northern Territory, and central Western Australia. Apparently a decided inland group.

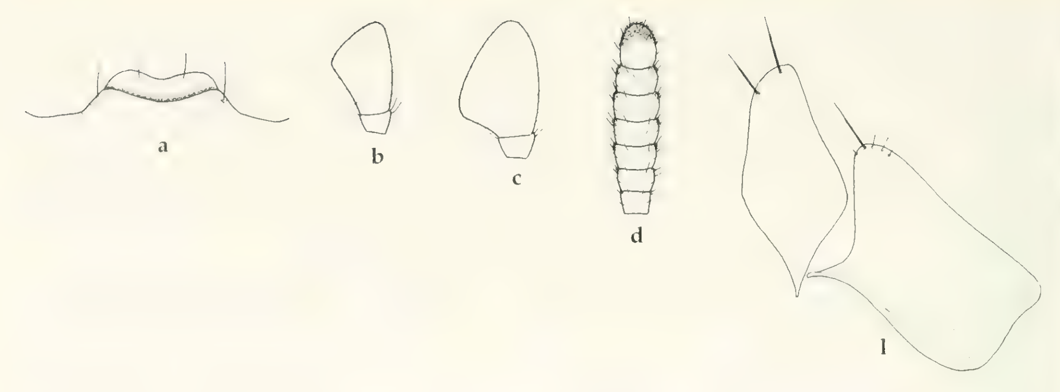
Systematic position. The relationships of this group are still rather obscure, because the ♂ genitalia are thus far unknown. However, it is probably the adelphotaxon of the *brevipennis*+*atrorufus*+*katherinei*-groups. Due to many autapomorphies it has a rather isolated systematic position. It is plesiomorphic in the absence of pattern and the large number of umbilical pores, and perhaps also in the rather explanate lateral margin of the pronotum. It is apomorphic, however, in the bisetose labrum, high number of glossal setae, abbreviated basal elytral border, low number of abdominal ambulatory setae, and presence of more or less distinct transverse impressions on pronotum and elytra.

Adelotopus marginicollis, spec. nov.

Figs 35, 125, 312, 464, 610

Types. Holotype: ♀, Aus. Qu. Mt. Isa March, 1986, J. Sedlacek, lg. (QMB T26079).

Diagnosis. Medium-sized, uniformly light reddish species, further distinguished from *A. coriaceus*, spec. nov. and *A. seminitidus*, spec. nov. by the faint, not rasp-like puncturation of the surface and the lack of a distinct microreticulation and coriaceous surface of the elytra.



Figs 125a-d, l. *Adelotopus marginicollis*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Description

Measurements. Length: 5.55 mm. Ratios. Width/length of pronotum: 1.38; width base/apex of pronotum: 1.32; width pronotum/head: 1.45; length/width of elytra: 1.72; length elytra/pronotum: 2.41.

Colour. Upper and lower surface including mouth parts, antennae, and legs uniformly light reddish.

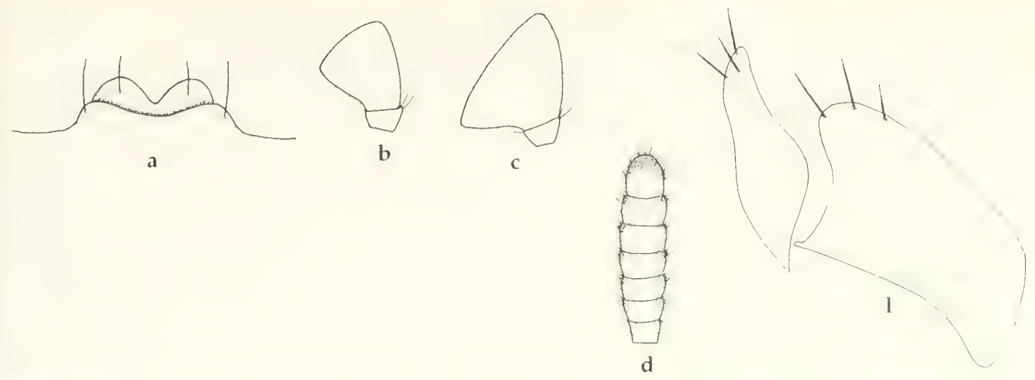
Head (Figs 125a-d). Rather short, wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture semicircular, laterally distinct, in middle widely interrupted. Labrum large, moderately overlapped by the clypeus, apex moderately deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum moderately wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 16 elongate setae. Terminal palpomere of maxillary palpus wide, distinctly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna fairly narrow, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation extremely fine, superficial, puncturation also very fine, both difficult to detect. Surface with very weak sulcus medially of eyes, very shortly pilose, fairly glossy. Ventrolaterally of eyes with a row of rather long setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 312). Rather wide, in middle moderately convex, much wider than long, base distinctly wider than apex, though widest about in middle. Apical angles rather produced, at apex obtusely rounded, fairly oblique, almost attaining posterior third of eyes. Apex well excised, convex in excision, finely bordered. Sides evenly rounded. Margins wide, explanate, finely bordered. Basal angles wide, obtusely rounded off. Base faintly convex, rather irregularly bordered. Surface near base with distinct, though not very deep transverse impression. Microreticulation absent, puncturation very fine, rather dense, surface with some extremely fine irregular wrinkles, very shortly pilose, glossy.

Elytra (Figs 312, 464). Rather elongate, slightly depressed on disk, rather parallel, though faintly narrowed in basal third and widened in apical half. Disk in basal third with a fairly shallow transverse impression. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow throughout, slightly widened in basal third, partly concealed. Basal border incomplete, reaching about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder and an additioal seta behind middle. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine, fairly dense, slightly rasp-like, surface shortly and rather densely pilose, glossy.

Lower surface. Prosternal process rather short, rather narrow, lower surface convex, apex narrow, compressed, passing over in a very wide angle from ventral surface, sparsely setose. Metepisternum elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface moderately sparsely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur



Figs 126a-d, l. *Adelotopus coriaceus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

moderately deep, anterior plate overlapping the groove for apical third, posterior border of groove sharp. Femur moderately wide. Metatibia narrow and elongate, >6.5 × as long as wide, 1st tarsomere of metatarsus c. 2.3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 125l). Stylomere moderately narrow, elongate, apex rather wide, obliquely convex, with 2 elongate apical setae. Lateral plate elongate, with 1-2 elongate and 0-3 short apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined holotype.

Habits. Unknown. Holotype collected in March.

Distribution (Fig. 610). Northwestern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the wide margins of the pronotum.

Adelotopus coriaceus, spec. nov.

Figs 36, 126, 313, 465, 610

Types. Holotype: ♀, Yuendumu Central Aust., J. H. Sedlacek (QMB T26076). – Paratypes: 1♀, Yuendumu Centr. Aust., J. H. Sedlacek Collector (CBM).

Diagnosis. Moderately large, dull black species, distinguished from the most closely related *A. seminitidus*, spec. nov. by narrower base of pronotum, shorter elytra, coriaceous surface due to strong microreticulation, rasp-like puncturation on the elytra, and narrow, elongate stylomere.

Description

Measurements. Length: 6.1-6.4 mm. Ratios. Width/length of pronotum: 1.49-1.52; width base/apex of pronotum: 1.29-1.34; width pronotum/head: 1.49-1.52; length/width of elytra: 1.63-1.65; length elytra/pronotum: 2.58.

Colour. Dull black, lateral margins of pronotum faintly reddish-piceous translucent. Lower surface blackish-piceous. Mouth parts and antennae reddish-piceous, legs piceous, tibiae and tarsi slightly lighter.

Head (Figs 126a-d). Rather short, wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture indistinct. Labrum large, moderately overlapped by the clypeus, apex deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum moderately wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with distinct keel, at border with

c. 16 elongate setae. Terminal palpomere of maxillary palpus wide, distinctly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna fairly narrow and elongate, rather parallel, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation distinct, rather coarse, puncturation rather coarse, moderately dense, somewhat irregular. Surface with very weak sulcus medially of eyes and some irregular wrinkles, shortly pilose, dull, rather coriaceous. Ventrolaterally of eyes with a row of rather long setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 313). Rather wide, in middle moderately convex, much wider than long, base distinctly wider than apex, though widest about in middle. Apical angles rather produced, at apex obtusely rounded, fairly oblique, almost attaining posterior third of eyes. Apex well excised, slightly convex in excision, bordered. Sides evenly rounded. Margins wide, explanate, finely bordered. Basal angles wide, obtusely rounded off. Base faintly convex, rather coarsely bordered. Surface near base with very deep and wide transverse impression. Microreticulation distinct, puncturation coarse, rather dense, coriaceous, surface with several irregular wrinkles, pilose, dull, markedly coriaceous.

Elytra (Figs 313, 465). Moderately elongate, rather wide, slightly depressed on disk, rather parallel, though faintly narrowed in basal third and widened in apical half. Disk in basal third with a deep transverse impression. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow throughout, slightly widened in basal third, partly concealed. Basal border incomplete, reaching about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder and an additional seta behind middle. Setae fairly elongate. Striae including sutural stria absent. Microreticulation distinct and rather coarse, puncturation coarse, rather dense, markedly rasp-like, surface shortly setose, markedly dull.

Lower surface. Prosternal process rather short, rather narrow, lower surface convex, apex narrow, compressed, passing over in a very wide angle from ventral surface, sparsely setose. Metepisternum very elongate, c. 2.0 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface moderately sparsely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third, posterior border of groove sharp. Femur moderately wide. Metatibia very narrow and elongate, c. 7.5 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 126l). Stylomere narrow, elongate, apex narrow, acute, medially obliquely convex, with 2-3 elongate apical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. There is some variation in the relative width of the base of the pronotum and in the shape of the stylomere.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Unknown.

Distribution (Fig. 610). Central Northern Territory. Known only from type locality.

Material examined (2). Only the holotype and the paratype.

Etymology. The name refers to the markedly coriaceous surface.

Adelotopus seminitidus, spec. nov.

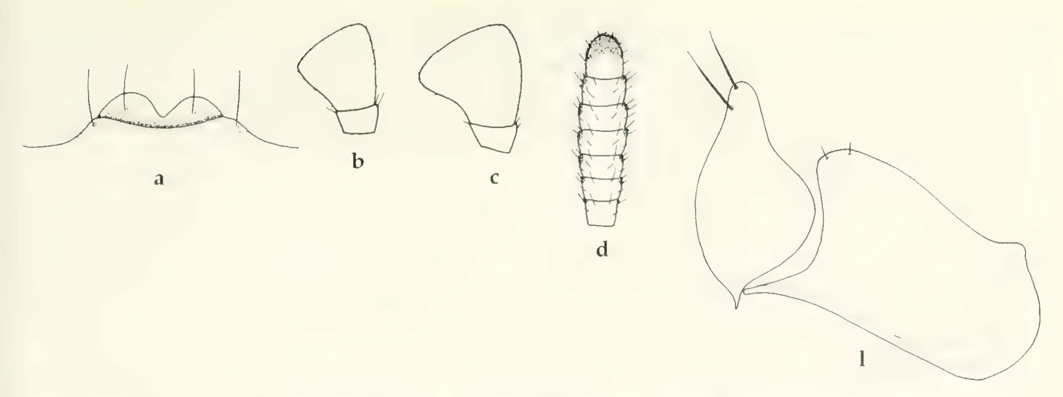
Figs 127, 314, 466, 610

Types. Holotype: ♀, Australien, WA 27, Sullivan Creek, 97 km sse. Leinster, 8.11.1987, M. Baehr (WAM).

Diagnosis. Large, rather glossy black species, distinguished from the most closely related *A. coriaceus*, spec. nov. by wider base of pronotum, longer elytra, glossy surface due to less distinct microreticulation, irregular, not rasp-like puncturation on the elytra, and wide, rather short stylomere.

Description

Measurements. Length: 7.2 mm. Ratios. Width/length of pronotum: 1.49; width base/apex of pronotum: 1.41; width pronotum/head: 1.50; length/width of elytra: 1.76; length elytra/pronotum: 2.80.



Figs 127a-d, l. *Adelotopus seminitidus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Colour. Dull black, lateral margins of pronotum faintly reddish-piceous translucent. Lower surface blackish-piceous. Mouth parts and antennae reddish-piceous, legs piceous-black, tibiae and tarsi slightly lighter.

Head (Figs 127a-d). Rather short, wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture indistinct. Labrum large, moderately overlapped by the clypeus, apex rather deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum moderately wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 16 elongate setae. Terminal palpomere of maxillary palpus wide, distinctly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna moderately elongate, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation almost absent, only faint traces visible, puncturation coarse, very dense, Surface with very weak sulcus medially of eyes, shortly and densely pilose, glossy. Ventrolaterally of eyes with a row of rather long setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 314). Rather wide, in middle moderately convex, much wider than long, base distinctly wider than apex, widest near base. Apical angles rather produced, at apex obtusely rounded, fairly oblique, almost attaining posterior third of eyes. Apex well excised, slightly convex in excision, bordered. Sides anteriorly evenly rounded, in basal half almost straight. Margins wide, explanate, finely bordered. Basal angles almost rectangular, obtusely rounded off. Base faintly convex, rather coarsely bordered. Surface near base with very deep and wide transverse impression. Microreticulation almost absent, only faint traces visible, puncturation coarse, very dense, surface densely pilose, glossy.

Elytra (Figs 314, 466). Elongate, rather wide, slightly depressed on disk, rather parallel, barely narrowed in basal third and widened in apical half. Disk in basal third with a deep transverse impression. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow throughout, slightly widened in basal third, partly concealed. Basal border incomplete, reaching about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder and an additional seta behind middle. Setae fairly elongate. Striae including sutural stria very vaguely indicated by series of punctures set in shallow, irregular furrows. Microreticulation absent, puncturation rather fine, very difficult to see, because the surface is markedly coriaceous. Surface shortly setose, glossy, in spite of the highly coriaceous structure.

Lower surface. Prosternal process rather short, rather narrow, lower surface convex, apex narrow, compressed, passing over in a very wide angle from ventral surface, sparsely setose. Metepisternum very elongate, c. 2.2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface moderately sparsely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus distinctly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third, posterior border of groove

sharp. Femur moderately wide. Metatibia very narrow and elongate, >8 × as long as wide, 1st tarsomere of metatarsus almost 3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 127l). Stylomere wide, tapering to apex, apex rather narrow, shortly rounded, with 2 elongate apical setae. Lateral plate elongate, with 1-2 short apical setae.

Variation. Unknown.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Holotype collected by me under bark of river gum in November.

Distribution (Fig. 610). Interior of Western Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the rather glossy surface as compared with the relative *A. coriaceus*, spec. nov.

exactor-group

Diagnosis. Medium-sized, rather depresed, piceous species with lighter margins. Labrum bisetose; glossa c. 10-12-setose; lateral margin of pronotum slightly explanate, basal angle obtuse; basal border line of elytra slightly abbreviated, reaching to median quarter of base, well visible; scutellar pore absent; lateral margin of elytra moderatel, without elongate setae behind shoulders; series of lateral pores with 6-7 subhumeral pores and 1 postmedian pore; abdominal sterna with 1 ambulatory seta on either side; sternum VI with a fringe of slightly longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; internal sac of aedeagus complicate, without distinct oblique fold near apex.

Larvae. Unknown.

Distribution. A single rather remarkable species in central Papau New Guinea.

Systematic position. This group is apomorphic in the rather short and wide legs and the complex internal sac of the aedeagus. It is rather plesiomorphic in the rather depressed body, the fairly wide pronotal margins, the but slightly abbreviated basal border of elytra, the number of umbilical pores, the presence of ambulatory setae on the abdomen, and the presence of a fringe of longer setae at the margin of sternum VI. The systematic position of the group is thus far rather obscure.

Adelotopus exactor Darlington, 1968

Figs 37, 128, 315, 467, 610

Adelotopus exactor Darlington, 1968, p. 240, fig. 153.

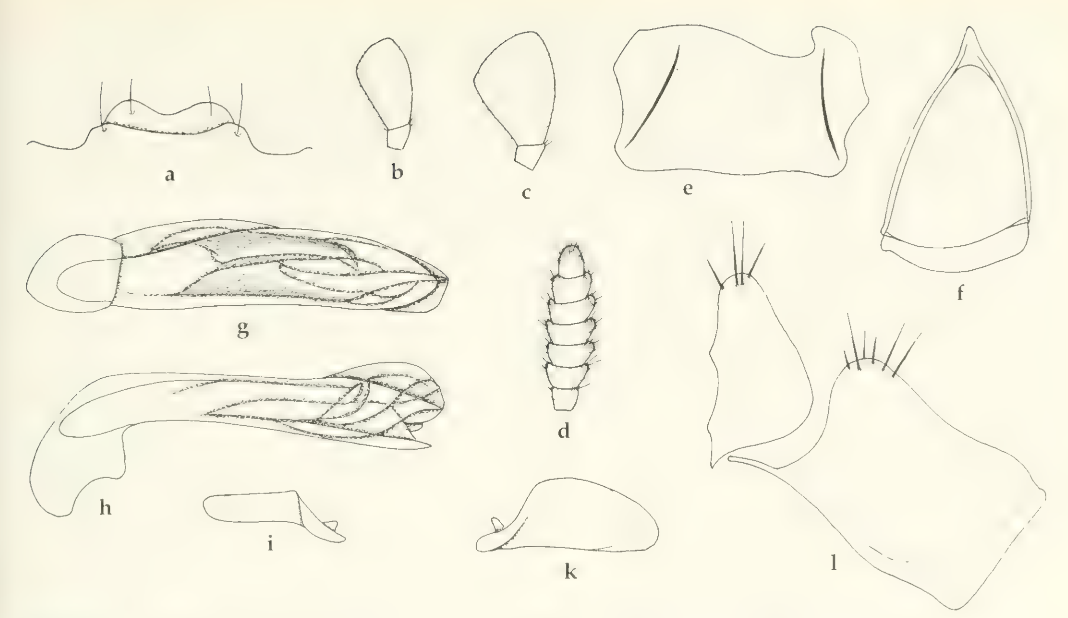
Types. Holotype: ♂, Wareo Finsch Haven New Guinea Rev. L. Wagner, Holotype *Adelotopus exactor* Darl. (SAMA). – Paratype: 1♀, same data, S. A. Museum specimen, *exactor* Darl., Paratype *Adelotopus exactor* Darlington (MCZ).

Type locality: "Wareo Finsch Haven", Papua New Guinea.

Diagnosis. Medium-sized, rather wide, moderately convex, piceous species with wide, basally rounded and slightly explanate, laterally distinctly reddish translucent pronotum. Further distinguished from relative species by rather distinct puncturation of head and pronotum, though much finer puncturation of elytra, narrow, elongate aedeagus with wide, though acute apex, and remarkably narrow right paramere.

Description

Measurements. Length: 6.7-7.0 mm. Ratios. Width/length of pronotum: c. 2.02-2.06; width base/apex of pronotum: c. 1.87; width pronotum/head: c. 1.92; length/width of elytra: c. 1.38-1.40; length elytra/pronotum: c. 2.90-3.10.



Figs 128a-l. *Adelotopus exactor* Darlington. Details of head and genitalia. For legends see fig. 100.

Colour (Figs 37, 315). Dark piceous, margins of pronotum and elytra distinctly reddish translucent. Lower surface, mouth parts, antenna, and legs reddish.

Head (Figs 128a-d). Short and wide, moderately depressed. Anterior border gently convex, though laterally of clypeus faintly concave, lateral angle angulate, laterally distinctly projecting, lateral borders oblique. Clypeal suture invisible. Labrum rather large, apex markedly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation extremely fine, fairly superficial, puncturation moderately fine, distinct, fairly dense, though somewhat irregular, surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather densely setose, gula apparently asetose.

Pronotum (Fig. 315). Wide, moderately convex, base wide, apex fairly narrow. Apical angles moderately produced, fairly acute, slightly oblique, attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, faintly bordered at least laterally. Sides curved throughout, widest at basal angles. Margins rather wide, somewhat explanate, faintly bordered. Basal angles shortly rounded off. Base almost straight, not bordered. Surface near base without transverse impression. Microreticulation extremely fine, superficial, puncturation moderately fine, distinct, rather dense, though somewhat irregular, surface with some fine, irregular strioles, impilose, fairly glossy.

Elytra (Figs 315, 467). Moderately elongate, fairly convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature apparently faintly concave, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, completely visible from above. Basal border slightly abbreviated, absent in median quarter, ending gradually. Scutellar pore absent. Lateral border asetose. Series of umbilical pores consisting of 6-7 (in both specimens on left side 7, on right side 6) pores behind shoulder and 1 additional pore behind middle. Setae short. Striae including sutural stria absent. Microreticulation very fine, rather superficial, though slightly more distinct than on fore body, almost isodiametric,

puncturation extremely fine, sparse, becoming slightly more distinct towards apex. Surface impilose, rather glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex rather short and wide, straight, shortly setose. Metepisternum short, c. 1.6 × as long as wide, in posterior third obliquely bent and slightly hollowed. Abdominal sterna apparently with 1 elongate setae on either side. Sternum VI with a row of slightly longer setae along apical border. Lower surface sparsely punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia rather short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 128e-k). Genital ring rather narrow, triangular, slightly asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically straight, with deep excision, basally gently bisinuate, lateral parts short. Aedeagus elongate, moderately depressed, narrow, parallel, barely asymmetric. Lower surface straight. Apex rather wide, rouded, though the very tip acute. Orifice rather short, internal sac fairly complex, without a distinct, oblique fold at apex. Both parameres, especially the right, rather elongate, left considerably larger than right, both with rounded apex.

♀ genitalia (Fig. 128l). Stylomere short and rather wide, with wide, markedly rounded apex, with 2-4 subapical setae. Lateral plate rather short, with 4-6 long apical setae.

Variation. Due to scarce material little variation noted. Most measurements and ratios are somewhat inaccurate, because both specimens are slightly damaged.

Vivipary. Not confirmed in the examined material.

Habits. Unknown.

Distribution (Fig. 610). Northeastern New Guinea. Known only from type locality.

Material examined (2). Only the holotype and the paratype.

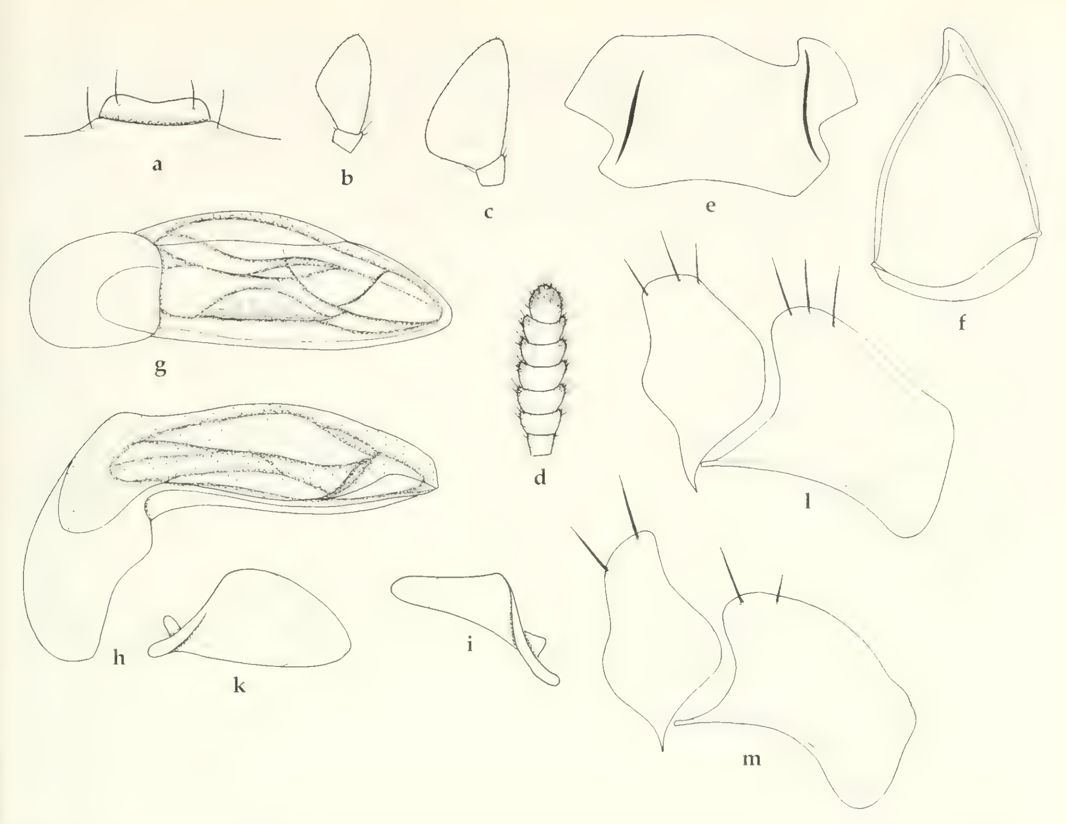
politus-group

Diagnosis. Medium-sized to rather large, convex, black or patterned species. Labrum bisetose; glossa c. 10-12-setose; lateral margin of pronotum narrow, not explanate, basal angle obtuse or shortly rounded off; basal border line of elytra almost complete, ending immediately near suture, always well visible; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores usually with 6 subhumeral pores and 1 postmedian pore (only in *A. substriatus*, spec. nov. the posthumeral pore absent); abdominal sterna with 1, rarely unilaterally 2 ambulatory setae on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; internal sac of aedeagus complicate, with oblique fold near apex.

Larvae. 1st instar larvae known of 7 species and one additional subspecies.

Distribution. 16 species and one additional subspecies in eastern Australia from eastern South Australia to northeastern Queensland, and in Tasmania.

Systematic position. This group is apomorphic in the convex body shape, the narrow margins of pronotum and elytra, the rather short and wide legs, the presence of a pattern in some species, and the complex internal sac of the aedeagus. It is, however, rather plesiomorphic in the almost complete basal border of elytra, the number of umbilical pores, and the presence of ambulatory setae on the abdomen. It may be the more primitive adelphotaxon of the following *villosus-linearis*-groups.



Figs 129a-m. *Adelotopus politus* Castelnau. Details of head and genitalia. For legends see fig. 100. **m.** Stylomere of specimen from Adelaide.

Adelotopus politus Castelnau, 1867
Figs 38, 129, 316, 468, 610

Adelotopus politus Castelnau, 1867, p. 31; 1868, p. 117; Lea 1910, p. 121; Notman 1925, p. 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

Types. Lectotype (by present designation): ♂, Clarence River Coll. Castelnau, *politus* Cast. Clarence River, Syntypus *Adelotopus politus* Castelnau, 1867 (MCSN) (see note below).

Type locality. "Clarence River", northern New South Wales (but see note below).

Note. The description gives as type localities" Clarence River" and "Brisbane". The latter locality, however, refers to a syntype specimen belonging actually to *A. montorum*, spec. nov. The reasons, why the name *politus* is not applied to this specimen, but to the syntype from Clarence River, are the following: 1. In the description the surface is described as "of a polished black" which matches better the specimen chosen here for the lectotype. 2. Already Gestro added two specimens to the type series that are conspecific to the lectotype chosen by me, which is evidence that Gestro used the name *politus* for the same species that I do.

Diagnosis. Medium-sized, rather elongate, very convex, black species with not explanate, at apex obtusely rounded margin of pronotum. Further distinguished from relative species by extremely fine microreticulation and puncturation of surface and short, barely asymmetric aedeagus with wide, obtusely rounded apex.

Description

Measurements. Length: 5.35-7.5 mm. Ratios. Width/length of pronotum: 1.72-1.85; width base/apex of pronotum: 1.58-1.69; width pronotum/head: 1.67-1.75; length/width of elytra: 1.38-1.48; length elytra/pronotum: 2.52-2.65.

Colour. Black, sometimes margins of pronotum and of elytra vaguely translucent. Lower surface of head and prothorax piceous, of abdomen reddish. Mouth parts, antenna, and legs piceous or reddish-piceous, cmmonly femora lighter, even reddish.

Head (Figs 129a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle narrowly interrupted. Labrum rather wide, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, though distinct, slightly superficial, puncturation extremely fine, sometimes almost invisible even under high magnification, surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Figs 38, 316). Moderately wide, highly convex, base wide, apex fairly narrow. Apical angles moderately produced, fairly acute, though obtuse at apex, slightly oblique, surpassing posterior border of eyes. Apex moderately deeply excised, rather convex in excision, not bordered. Sides curved throughout, widest at or near basal angles. Margins very narrow, not bordered. Basal angles more or less obtusely rounded off. Base almost straight, faintly bordered. Surface near base without transverse impression. Microreticulation very fine, rather superficial, puncturation extremely fine, sometimes almost invisible even under high magnification, surface impilose, rather glossy.

Elytra (Figs 38, 316, 468). Moderately elongate, convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pores absent. Lateral border asetose. Series of umbilical pores consisting of 6 (sometimes unilaterally 7) pores behind shoulder and 1 additional pore behind middle. Setae short. Striae including sutural stria absent. Microreticulation very fine, highly superficial, isodiametric to slightly transverse, puncturation extremely fine, rather sparse. Both, microreticulation and puncturation visible only under high magnification. Surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex rather short and wide, straight, shortly setose. Metepisternum short, c. 1.5 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia rather short, c. 4 × as long as wide, 1st tarsomere of metatarsus <1.8 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 129e-k). Genital ring rather wide, triangular, slightly asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically straight, with deep excision, basally gently concave, lateral parts rather short. Aedeagus short, moderately depressed, in middle slightly widened, slightly asymmetric. Lower surface convex. Apex rather wide, obtusely rounded. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Right paramere rather elongate, left considerably larger than right, both with obtusely rounded apex.

♀ genitalia (Figs 129l,m). Stylomere short and wide, with wide, rather transverse apex, with 2-3 subapical setae. Lateral plate moderately elongate, with 2-4 apical setae.

Variation. This species is rather variable with respect to size and shape of pronotum and elytra. Whereas relative width of pronotum depends to some degree on sex, because the larger females usually possess a relatively wider and more convex pronotum than the smaller and narrower males, relative length of elytra is perhaps not connected with sex. There is also some variation in shape of the

basal angles of pronotum which may be more or less evenly rounded, and in microreticulation and puncturation of the surface.

The two specimens from South Australia differ somewhat in their ♀ genitalia (Fig. 129m) and may belong to another taxon, but this is doubtful, as long as no males are available.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Little known, although the number of specimens is rather numerous. Specimens collected by me under bark of river gums, single other species captured in "Malaise trap" and in "flight intercept trap". So far collected in all months, but more commonly during summer. This is a common and widespread species, though apparently most common in southeastern Queensland, apparently rare in northern Queensland.

Distribution (Fig. 610). Southeastern and eastern Australia from eastern South Australia through eastern Victoria, eastern New South Wales and eastern Queensland up to lower Cape York Peninsula. A single old record from Tasmania is doubtful. Perhaps the specimens from South Australia belong to another taxon (see above under "variation").

Material examined (112). **SA:** 1♀, Port Lincoln Blackburn, Sharp Coll. 1906, *Adelotopus* sp. ? Id. by T. G. Sloane (BMNH); 1♀, Adelaide Blackburn, *hydrobioides* Westw., *Adelotopus hydrobioides* W. N. S. W.: SA I 7109 (SAMA). – **Vic:** 1♂, 1♀, Melbourne Stevens, Ex Musaeo Chaudoir, det. *hydrobioides* Westw. (MNHN); 2♀♀, Ringwood C. Oke, *Adelotopus hydrobioides* Westw. (NMV); 1 (sex ?), Delatite R. 8.III.59 B. P. Moore (CMC). – **Tas:** 1 (sex?), *scolytides* Mw. V. Diem. Prob. this ex. = *gyrinoides* Hope. It is not Newmans type but det as his sp. in Coll. WMS t. in B. M. jan. 23 1922, G. J. Arrow (OUM). – **NSW:** 1♀, N. Sydney, 6.VII.1912 Musgrave, *Adelotopus* sp. L 30436 (AMS); 1♀, Sydney district J. J. W. XII.1900, *hydrobioides= apicalis* (ANIC); 1♂, 1♀, Sydney, R. Mus. Hist. Nat. Belg. I. G. 12 595 (IRSNB); 1♂, 1♀, Megalong Vy, Blue Mts., 22.I.32, 1000 ft. Australia Harvard Exp. Darlington, *Adelotopus hydrobioides* Westw. (MCZ); 2♀♀, Mt. Victoria D'Albertis 73, *politus* Cast., *Adelotopus politus* Cast. det. R. Gestro (MCSN); 1♀, Mt. Victoria I.1931 C. Oke, *Adelotopus politus* Cast. (NMV); 1♀, Mt. Wilson I.1931; C. Oke (NMV); 2♀♀, Hunter R. (MMS); 1♀, *haemorrhoidalis* Goulburn R. (OUM); 1♂, 4-8 km SW Lake Cathie 11.XI.1982 J. Doyen Coll. (ANIC); 1♂, Bonville 26.I.78 B. P. Moore (CMC); 1♀, Yuragir NP Station Creek 20.XI.1982, J. & E. Doyen (ANIC); 2♂♂, Greta 1951, J. Sedlacek (CSB); 2♀♀, Eccleston T. G. S. III.21, *A. politus* Cast. comp. spec in H. Coll. 26.XI.21 (ANIC); 1♀, Ac. Ck. T. G. S. 25.XII.10, *A. politus* Cast. (ANIC); 1♀, West Head 25.XI.1978 D. A. Doolan, D. A. Doolan Coll. (AMS); 1♂, Bostobrick 15.II.1981 D. A. Doolan, D. A. Doolan Coll. (AMS); 2♀♀ (?), Gordon 16.XII.1962 D. A. Doolan, D. A. Doolan Coll. (AMS); 1♂, Clarence River Coll. Castelnau, *politus* Cast. Clarence River, lectotype *politus*! (MCSN); 1♀, Clar. R., *politus* Cast. 50 Howitt Colln. (NMV); 1♂, *A. politus* Tweed R., *Adelotopus politus* Cast. (SAMA); 1♀ (?), Rope's Ck. (MMS); 1♀, Coll. Castelnau, N. S. W., *hydrobioides* Westw. (MCSN). – **Qld:** 1♂, Warwick X.1949, E. (?), det. *politus* (NMV); 8♀♀, Stanthorpe 21.VIII.24 E. Sutton, E. Sutton Coll. 1964 (QMB); 1♂, Stanthorpe, 4.V.23 (QMB); 1♀, Stanthorpe, III.82 J. Sedlacek (CSB); 1♂, Qld 69, 15 km ssw. Rathdowney, 26.XI.1990, M. Baehr (CBM); 1♀, Mt. Maroon, 400-700 m, 13.XII.1981, M. Baehr (CBM); 1♂, Qld 61, 6 km e. Spicer's Gap, 22.XI.1990, M. Baehr (CBM); 1♀, Tambourine Mt. 10.V.-28, E. Sutton Coll. (QMB); 1♂, 1♀, Brisbane Illidge (UQIC); 1♀, Biró 1900, Brisbane (HNMB); 1♀, Brisbane H. Hacker 8.VII.11, *Adelotopus politus* Cast. Det. Sloane (QMB); 1♀, Brisbane I.07 *Adelotopus politus* Cast., Coll. Hacker, *A. politus* Lap. (DEIB); 1♀, Brisbane: H. Hacker 23.X.21 (QMB); 1♂, Brisbane Mt. Gravatt 2.I.52 C. Oke, *Adelotopus politus* Cast. compared with paratype (NMV); 1♀, Bickdale Brisbane H. Hacker 16.II.25 (QMB); 1♂, Sandford, 18.II.1973, J. Collingwood (UQIC); 1♂, Sandgate, Coll. F. Muir 9.XI.1919 (BMH); 2♀♀, Caloundra H. Hacker 28.IX.13 (QMB); 1♀, 42156, Moreton Bay, *politus* Cast. (MNHB); 1♂, Moreton Bay, Brisbane VII.-VIII.1915, J. C. Bridwell Coll., det. *Scolytides* (USNM); 1♀, E. Sutton TE 18.XII.31 Rivertree, E. Sutton Coll. 1964 (QMB); 1♀, Deception Bay, 17.IX.1961, R. G. Winiks (UQIC); 1♀, Dunwich, Stradbroke Is. 27.IV.1963, G. Monteith (UQIC); 1♂, Moreton Bay, Stradbroke I. 20.IX.1915, J. G. Bridwell Coll., *A. scolytides* det. T. L. Erwin (USNM); 1♂, Upper Cedar Ck. Via Samford, Qld. 6.XII.62 G. Monteith (UQIC); 1♂, Glen Aplin, Qld. 6.I.1964 P. Kerridge (UQIC); 1♀, Kenilworth State Forest, 5.XII.1966, G. Monteith (UQIC); 1♂, Hampton S. Q. I.65 T. M. J. G. Brooks Bequest, 1976 (ANIC); 1♀, Lawes 10.IV.52 Prarad (UQIC); 1♀, Fraser Island 1.-6.V.1967, C. R. Hembrow (UQIC); 1♂, 1♀, Frazer Is. 15.V.81 (CSB); 1♂, Bundaberg, Coll. F. Muir III.1919 (BMH); 1♀, Bundaberg, Perkins (BMNH); 1♀, Yeppoon, 11.I.1962, L. A. Powell (UQIC); 2♀♀, Qld 20, Cania Gorge, 25 km nw. Monto, 9.-11.XI.1990, M. Baehr (CBM); 1♀, Kroombit Tops 10.XI. 700 m, J. Sedlacek (CSB); 1♀, Qld 22, Cariboe Ck., 26 km sse. Biloela, 11.XI.1990, M. Baehr (CBM); 1♂, Carnarvon Rge, N. Geary, 5.I.59, det. *politus* (AMS); 1♀, Carnarvon R. A. IX.54 JGB, M. 188, J. G. Brooks Bequest, 1976 (ANIV); 1♀, Maryborough (SAMA); 1♀, Rockhampton 26.XII.1967 J. & M. Sedlacek collr. (BMH); 1♀, Rockhampton (OUM); 1♂, Mackay, *Adelotopus* (ANIC); 1♂, 5161 Mackay, *apicalis* Macl., *Adelotopus apicalis* Macl. (SAMA); 1♂, 131 Mackay (SAMA); 2♀♀, Mackay, C. French's Coll. (NMV); 1♂, 15.39S 144.31E Split Rock QLD 24 Nov-13 Dec 1992 Malaise Trap P. Zborowski & W. Dressler (DPIM); 1♂, 15.39S 144.42E Split Rock QLD 29 Jun-24 Aug 1992 Flight Intercept Trap P. Zborowski & J. Cardale (DPIM); 1♂, 1♀, C. York, Soc. Ent. Belg. Coll. PUTZEYS, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, Caborlah (?) Q. T.G.S. 24.12.10

(ANIC); 1♀, Ex Museo H. W. Bates 1892 (MNHN); 1♀, Thorey 1867, North Holl. bor.(NHMW). – **Aus:** 1♀, 58.124, det. *gyrinoides* (BMNH); 1♂, Ex Museo L. Fairmaire 1896 (MNHN). – **?:** 1♀, Mt. Tonah II.32. HJC (ANIC); 1♂, 3♀♀, Palm B. 31.XII.33, M. 169, J. G. Brooks Bequest, 1976 (ANIC); 1♀, E. W. Ferguson Coll. *Adelotopus haemorrhoidalis* Erich. (ANIC); 1♀, Thorey 1867 (NHMW); 1♀ (NMV).

Adelotopus variolosus Lea, 1910

Figs 130, 317, 469, 611

Adelotopus variolosus Lea, 1910, p. 121; Notman 1925, p. 6, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 53.

Types. Holotype: ♀, *variolosus* Lea Type Sydney, 2494 *Adelotopus variolosus* Lea N. S. Wales, Type (SAMA).

Type locality: "Sydney", New South Wales.

Diagnosis. Medium-sized, rather wide, convex, black species with wide, basally rounded and laterally distinctly beaded pronotum. Further distinguished from relative species by the extremely fine microreticulation and puncturation of surface.

Description

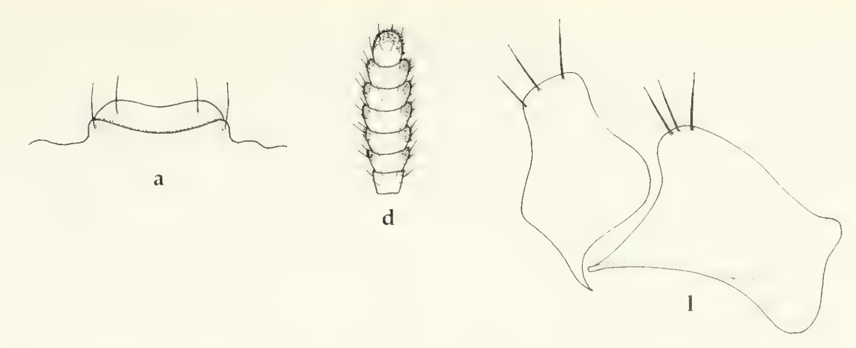
Measurements. Length: 7.0-7.3 mm. Ratios. Width/length of pronotum: 1.89-1.95; width base/apex of pronotum: 1.77-1.80; width pronotum/head: 1.79-1.87; length/width of elytra: c. 1.38; length elytra/pronotum: 2.62-2.74.

Colour. Dark piceous to black, margins of pronotum and elytra vaguely translucent. Lower surface of head and pronotum blackish-piceous, of abdomen reddish-piceous to reddish. becoming lighter towards apex. Antenna and legs reddish-piceous, femora lighter.

Head (Figs 130a,d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, complete. on either side near base with a distinct pit. Labrum rather large, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Both, maxillary and labial palpi in both examined specimens broken. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation very fine, though distinct, puncturation extremely fine, almost invisible even under high magnification. Surface with a shallow sulcus medially of eyes and with some faint, irregular strioles, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 317). Wide, rather convex, base wide, apex rather narrow. Apical angles moderately produced, fairly acute, though obtuse at apex, slightly oblique, surpassing posterior border of eyes. Apex moderately deeply excised, rather convex in excision, not bordered. Sides curved throughout, widest near basal angles. Margins narrow, not explanate, distinctly bordered. Basal angles rounded off. Base faintly bisinuate or concave, not bordered. Surface near base without transverse impression. Microreticulation extremely fine, rather superficial, puncturation even finer than on head, rather sparse, difficult to see even under high magnification, surface with some faint irregular strioles, impilose, glossy, in holotype with some large drop-like impressions.

Elytra (Figs 317, 469). Moderately elongate, convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders rather distinct, obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, completely visible from above. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pores absent. Lateral border asetose. Series of umbilical pores consisting of 6-7 pores behind shoulder and 1 additional pore behind middle. Setae short. Striae including sutural stria absent in basal half, inner striae near apex vaguely indicated by extremely fine rows of strioles and punctures. Microreticulation extremely fine, highly superficial, isodiametric to slightly transverse, puncturation minute, rather sparse, difficult to see, becoming more distinct towards apex. Surface impilose, glossy, in holotype with several large and small drop-like impressions, especially on left elytron.



Figs 130a, d, l. *Adelotopus variolosus* Lea. Details of head and ♀ genitalia. For legends see fig. 100.

Lower surface. Prosternal process rather short, fairly wide, straight, depressed, apex rather short and wide, straight, shortly setose. Metepisternum rather short, c. 1.7 × as long as wide, in posterior third obliquely bent and somewhat hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia moderately short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus unknown. In holotype most legs broken, only femora and mesotibia of left side left.

♂ genitalia. Unknown.

♀ genitalia (Fig. 130l). Stylomere moderately wide to rather wide, with wide, transverse to feebly convex apex, with 3 subapical setae. Lateral plate rather elongate, with 3 long apical setae.

Variation. Little variation noted, besides of the conspicuous drop-like impressions in the holotype.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. One specimen captured in September. Certainly this is a rare or even already extinct species, because the type locality is "Sydney" and it has been never recollected in recent times.

Distribution (Fig. 611). Central eastern New South Wales. Known only from type locality.

Material examined (2). 1♀, *variolosus* Lea Type Sydney, 2494 *Adelotopus variolosus* Lea N. S. Wales, Type, holotype! (SAMA); 1♀, Australien, A. L Schrader leg, ded 25.IX.1896, *Adelotopus hydrobioides* Westw ? Det. Sloane '07 (ANIC).

Note. The drop-like impressions on pronotum and elytra of the holotype emphasized in the description do not constitute a determinative character of this species, though an abnormal structure that is also rarely seen in other species.

Adelotopus aterrimus, spec. nov.

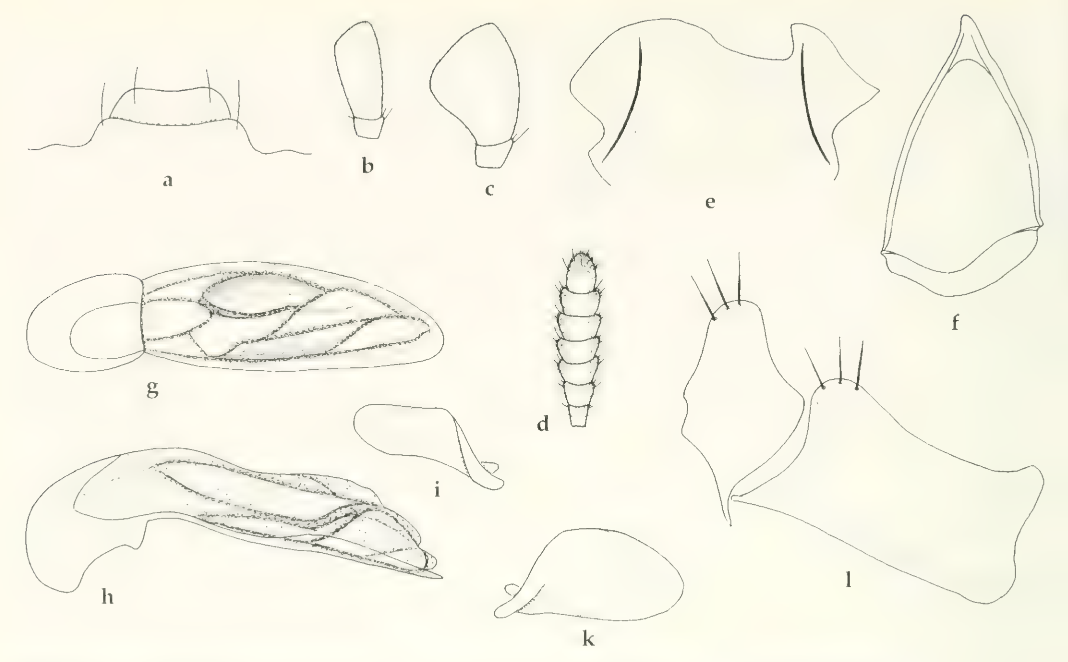
Figs 131, 318, 470, 611

Types. Holotype: ♂, 3902, *Adelotopus* 3902 N. S. Wales (SAMA). – Paratype: 1♀, Australien, NSW 82, 50 km e. Armidale, 29.11.1990, M. Baehr (CBM).

Diagnosis. Rather large, elongate, moderately convex, deep glossy black species with evenly rounded basal angles, but not explanate lateral margins of pronotum. Further distinguished by glossy surface, extremely fine puncturation, and rather symmetric aedeagus with widely rounded apex.

Description

Measurements. Length: 7.55-8.55 mm. Ratios. Width/length of pronotum: 1.67-1.72; width base/apex of pronotum: 1.56-1.58; width pronotum/head: 1.67-1.70; length/width of elytra: 1.60-1.66; length elytra/pronotum: 2.81-2.85.



Figs 131a-l. *Adelotopus aterrimus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Colour. Deep glossy black, only apex of elytra faintly reddish translucent. Lower surface of head and thorax black to piceous, abodmen piceous to reddish-piceous, becoming lighter towards apex. Mouth parts and antennae reddish, legs piceous.

Head (Figs 131a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, almost complete. Labrum large, apex barely concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically slightly triangular, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna rather short, 8th-9th antennomeres slightly $<2\times$ as wide as long. Microreticulation fine, though distinct, puncturation almost invisible within microreticulation, surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi moderately setose, gula apparently asetose.

Pronotum (Fig. 318). Rather wide, fairly convex, base wide, apex fairly narrow. Apical angles moderately produced, fairly acute, slightly oblique, attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides curved throughout, widest at basal angles. Margins rather narrow, not explanate, faintly bordered. Basal angles rather widely rounded off. Base almost straight to slightly convax, finely bordered. Surface near base without transverse impression. Microreticulation very fine, rather superficial, puncturation extremely fine, almost invisible even under high magnification, rather sparse, surface impilose, glossy.

Elytra (Figs 318, 470). Moderately elongate, fairly convex, margins in basal ¾ almost parallel. Apex rather wide, slightly oblique, truncature rather convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, slightly concealed in basal part. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pore absent. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore (or unilaterally 2 pores) behind middle. Setae moderately short. Striae including sutural stria absent or indicated as very indistinct, widely spaced rows of fine

punctures. Microreticulation absent, puncturation extremely fine, dificult to detect even under high magnification, rather sparse, becoming slightly more distinct towards apex. Surface impilose, remarkably glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex rather short and wide, convex, sparsely setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third neither bent nor hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface very sparsely punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus claerly wider than long, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia rather short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 131e-k). Genital ring medium-sized, triangular, rather asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically gently convex, with deep excision, basally probably gently concave, lateral parts moderately elongate. Aedeagus medium-sized, moderately depressed, in middle slightly widened, feebly asymmetric. Lower surface almost straight. Apex wide, rounded off. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Both parameres, rather wide, left considerably larger than right, both with widely rounded apex.

♀ genitalia (Fig. 131l). Stylomere short and rather wide, triagonal, with wide, rounded apex, with 2-3 subapical setae. Lateral plate elongate, with 3 long apical setae.

Variation. Apart from some differences of relative shape and of degree of puncturation of elytra little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Little known. The paratype collected by me in November under bark of ash-like eucalypt in rather dense eucalypt forest.

Distribution (Fig. 611). New South Wales. Only the paratype is exactly labelled and is from the New England Tableland in northern New South Wales.

Material examined (2). Only the holotype and the paratype.

Etymology. The name refers to the deep black colouration.

Adelotopus doyeni, spec. nov.

Figs 132, 319, 471, 611

Types. Holotype: ♂, Australia, NSW 14 km N Deepwater, 25.II.1989, H. & A. Howden, Under logs (NMO). – Paratypes: 1♀, Mebbin St. For. NSW, 18 km W of Uki, 23-24 Nov.1982, J. Doyen (ANIC); 1♀, Qld. 13-15 km N of Quinalow, 29 Nov.1982, J. Doyen coll. (ANIC); 1♀, Australien, Qld 53, 20 km s. Gin Gin, 21.11.1990, M. Baehr (CBM); 1♂, Australia. Qld. Blackdown Tableland nr. Ranger Station 900 m, 15.XII.1988, H. & A. Howden (NMO).

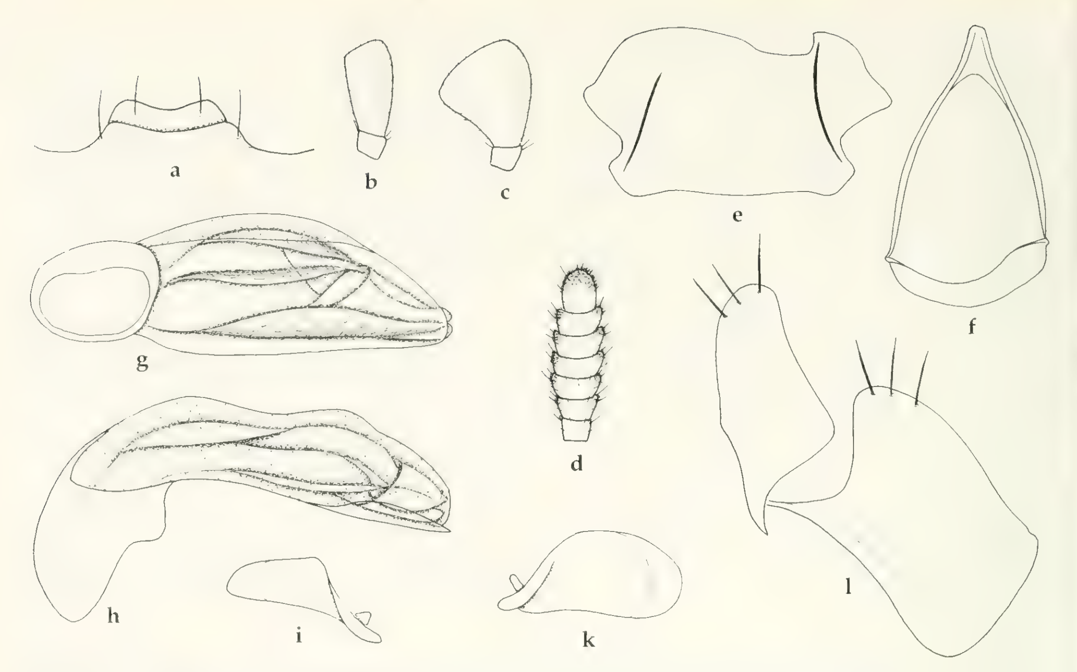
Diagnosis. Medium-sized, moderately elongate, moderately convex, black species with obtuse angles, not explanate lateral margins of pronotum. Further distinguished by fine microreticulation, fine puncturation, and short, asymmetric aedeagus with narrowly rounded apex.

Description

Measurements. Length: 5.4-6.9 mm. Ratios. Width/length of pronotum: 1.73-1.85; width base/apex of pronotum: 1.56-1.67; width pronotum/head: 1.63-1.75; length/width of elytra: 1.47-1.53; length elytra/pronotum: 2.60-2.72.

Colour. Black, margins of pronotum and elytra more or less distinctly reddish translucent. Lower surface of head and thorax blackish to piceous, of abdomen reddish-piceous to reddish, becoming lighter towards apex. Mouth parts and antenna piceous to reddish-piceous, legs piceous, femora usually slightly lighter.

Head (Figs 132a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle widely interrupted. Labrum rather large, apex gently concave. Antennal groove laterally



Figs 132a-l. *Adelotopus doyeni*, spec. nov. Details of head and genitalia. For legends see fig. 100.

sharply bordered, latero-posteriorly without or with gently carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation very fine, more or lass distinct, puncturation either almost invisible even at high magnification or very fine though fairly distinct. Surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi moderately setose, gula apparently asetose.

Pronotum (Fig. 319). Rather wide, fairly convex, base wide, apex fairly narrow. Apical angles moderately produced, fairly acute, slightly oblique, attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, laterally faintly bordered. Sides curved throughout, widest at or near basal angles. Margins rather narrow, not explanate, faintly bordered. Basal angles more or less obtusely rounded. Base almost straight to slightly convex, finely bordered. Surface near base without transverse impression. Microreticulation very fine, more or less superficial, puncturation in males extremely fine, almost invisible even under high magnification and rather sparse, in females fairly distinct and rather dense, surface impilose, glossy.

Elytra (Figs 319, 471). Moderately elongate, fairly convex, margins in basal half almost parallel or but faintly convex. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, barely concealed in basal part. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pore absent. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae moderately short. Striae including sutural stria absent or indicated as more or less distinct rows of moderately fine punctures. Microreticulation fine, somewhat superficial, slightly transverse, puncturation in males extremely fine, difficult to detect even under high magnification, sparse, in females more distinct, fairly dense, becoming more distinct towards apex. Surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and

rather short, transversely cut, sparsely setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third distinctly obliquely bent and hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia rather short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.7 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 132e-k). Genital ring medium-sized, triangular, rather asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically gently convex, with deep excision, basally slightly excised but gently convex, lateral parts moderately elongate. Aedeagus rather short, moderately depressed, in middle rather widened, asymmetric. Lower surface almost straight. Apex moderately wide, rounded off. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Right paramere rather narrow, apex obliquely rounded, left large, considerably larger than right, with widely rounded apex.

♀ genitalia (Fig. 132l). Stylomere rather narrow, fairly parallel, with wide, obliquely rounded apex, with 2-3 subapical setae. Lateral plate elongate, with 3-4 long apical setae.

Variation. There is considerable variation of size, relative width of pronotum, and degree of microreticulation and puncturation of pronotum and elytra. Perhaps the latter differences are partly sexual, because both males have more superficial microreticulation and very sparse and indistinct puncturation, whereas in the three females both, microreticulation and puncturation are markedly more distinct.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Little known. One specimen collected "under logs", another captured by me under bark of river gum. One specimen collected at the height of 900 m on the Blackdown Tableland. Records are from November, December, and February.

Distribution (Fig. 611). Northern New South Wales, southeastern Queensland north to about Rockhampton.

Material examined (5). Only the type series.

Etymology. Named in honour of the collector of a part of the type series.

Adelotopus substriatus, spec. nov.

Figs 133, 320, 472, 612

Types. Holotype: ♀, HT, 3896, *A. hydrobioides* Westw. Forest-Reefs, Lea's, *Adelotopus hydrobioides* We. N. S. Wales 268, *Adelotopus haemorrhoidalis* Er. Id. by T. G. Sloane (SAMA). – Paratypes: 2♀♀, same data, on same card (SAMA); 1♀, Australien, NSW 81, 5 km e. Armidale, 29.11.1990, M. Baehr (CBM); 1♀, Australien, NSW 76, 22 km n. Glen Innes, 28.11.1990, M. Baehr (CBM).

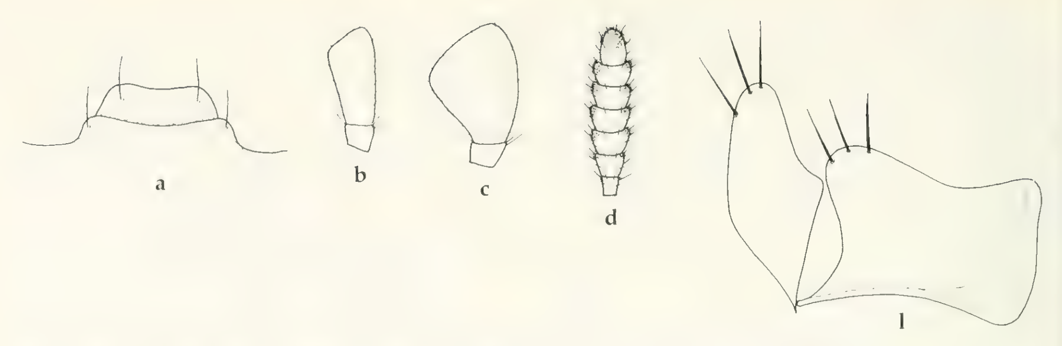
Diagnosis. Rather elongate and narrow, black species with narrow, at basal angles shortly rounded pronotum with very narrow margin. Further distinguished by the distinct traces of striae on the whole elytra.

Description

Measurements. Length: 6.0-6.8 mm. Ratios. Width/length of pronotum: 1.53-1.60; width base/apex of pronotum: 1.48-1.54; width pronotum/head: 1.52-1.58; length/width of elytra: 1.68-1.70; length elytra/pronotum: 2.70-2.78.

Colour. Black. Lower surface of head and thorax dark piceous, of abdomen reddish-piceous to reddish, beoming lighter towards apex. Mouth parts and antenna reddish to reddish-piceous, legs piceous, femora slightly lighter.

Head (Figs 133a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, not interrupted. Labrum large, apex barely concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum



Figs 133a-d, l. *Adelotopus substriatus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation fine, though distinct, puncturation present, though almost invisible even at high magnification due to distinct microreticulation. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi moderately setose, gula apparently asetose.

Pronotum (Fig. 320). Rather narrow, convex, base moderately wide, apex distinctly narrower. Apical angles moderately produced, moderately airly acute, slightly oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, unbordered. Sides gently curved throughout, widest at basal third. Margins narrow, not explanate, distinctly bordered. Basal angles shortly, though evenly rounded off. Base almost straight, finely bordered. Surface near base without transverse impression. Microreticulation very fine, slightly superficial, puncturation extremely fine, difficult to see even under high magnification, though laterally more distinct, moderately dense, surface with some extremely fine irregular strioles, impilose, glossy.

Elytra (Figs 320, 472). Rather elongate, convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed on whole length. Basal border almost complete, absent only very close to suture, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder only. Setae moderately short. Striae including sutural stria faintly indicated as rows of extremely fine longitudinal strioles and punctures, sometimes even extremely faintly impressed. Microreticulation very fine, highly superficial, slightly transverse, puncturation fine, though distinct, dense, surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, straight, sparsely setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third neither bent nor hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

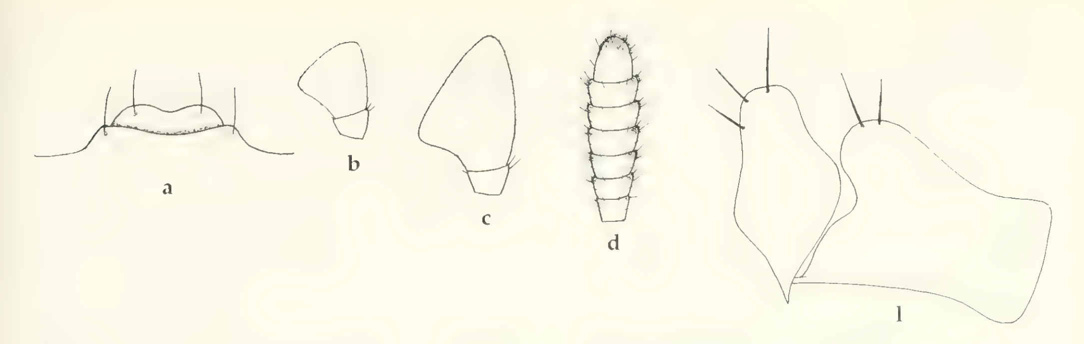
Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur very deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia moderately short, >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 133l). Stylomere fairly narrow, feebly triangular, with wide, rounded apex, with 2-4 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.



Figs 134a-d, l. *Adelotopus sedlaceki*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Habits. Largely unknown. Two specimens collected by me in November under bark of gum-type eucalypts.

Distribution (Fig. 612). Northeastern New South Wales.

Material examined (5). Only the type series.

Etymology. The name refers to the traces of striation on the elytra.

Adelotopus sedlaceki, spec. nov.

Figs 134, 321, 473, 611

Types. Holotype: ♀, Bamaga, N.Q., Dec. 1983, J. H. Sedlacek (QMB T26081).

Diagnosis. Medium-sized, rather wide, moderately convex, dull black species with wide pronotum with rather wide, slightly explanate margins and wide, rectangular basal angles. Further distinguished by comparatively depressed build, fine, though very distinct microreticulation, rather dull, silky surface, and elytral striae at apex marked by fairly coarse, slightly rasp-like punctures.

Description

Measurements. Length: 6.7 mm. Ratios. Width/length of pronotum: 1.86; width base/apex of pronotum: 1.76; width pronotum/head: 1.81; length/width of elytra: 1.38; length elytra/pronotum: 2.56.

Colour. Rather dull black, margins of pronotum and elytra rather distinctly reddish translucent. Lower surface of head and prothorax piceous, of rest of thorax and abdomen reddish-piceous to reddish, becoming lighter towards apex. Mouth parts, antenna and legs reddish-piceous, femora lighter.

Head (Figs 134a-d). Short and wide, moderately depressed. Anterior border rather convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, feebly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, though very distinct, puncturation very fine, though distinct, rather dense. Surface with a shallow sulcus medially of eyes, impilose, fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 321). Wide, rather convex, base wide, apex narrow. Apical angles rather produced, fairly acute, somewhat oblique, surpassing posterior third of eyes. Apex rather deeply excised, slightly

convex in excision, laterally finely bordered. Sides evenly curved throughout, widest at basal angles. Margins rather wide, slightly explanate, not bordered. Basal angles almost rectangular, barely obtuse, faintly produced backwards. Base slightly concave, unbordered. Surface near base without transverse impression. Microreticulation fine, distinct, puncturation extremely fine, difficult to see even under high magnification, moderately dense, surface with some faint, irregular strioles, impilose, dull, rather silky.

Elytra (Figs 321, 473). Moderately elongate, moderately convex, margins faintly convex throughout. Apex rather narrow, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately narrow, on whole length visible from above. Basal border almost complete, absent only very close to suture, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Median striae in basal half faintly indicated as rows of extremely fine longitudinal strioles, in apical third as irregular rows of rather large, somewhat rasp-like punctures. Microreticulation fine, though distinct, about isodiametric, puncturation basally extremely fine, difficult to see, sparse, becoming more distinct and denser towards apex and margins, surface impilose, dull, fairly silky.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, straight, rather setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia medium-sized, slightly <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus not widened.

♂ genitalia. Unknown.

♀ genitalia (Fig. 134l). Stylomere fairly wide, gently triangular, with wide, rather transverse apex, with 3 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in December.

Distribution (Fig. 611). Tip of Cape York Peninsula, northernmost Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. Named in honour of the collector.

Adelotopus caniae, spec. nov.

Figs 135, 322, 474, 612

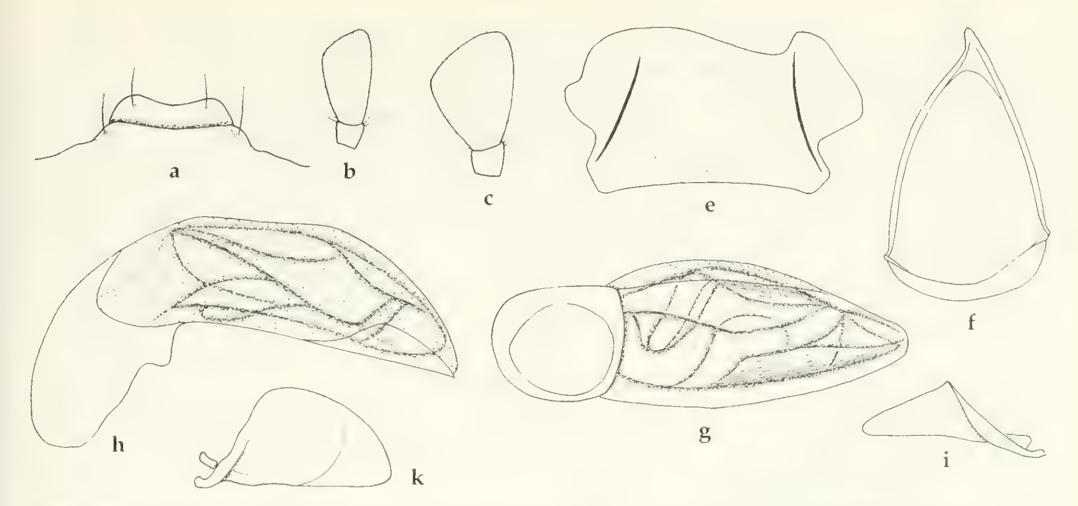
Types. Holotype: ♂, Australien, Qld 21, 2 km se. Cania Gorge, 25 km n. Monto, 11.11.1990, M. Baehr (ANIC).

Diagnosis. Rather small, narrow, moderately convex, glossy black species. Distinguished by rather narrow pronotum, with moderate margins and obtusely rounded basal angles, parallel, on disk somewhat depressed elytra with dense and rather coarse puncturation, and short and rather high, symmetric aedeagus with rather triangular parameres.

Description

Measurements. Length: 5.45 mm. Ratios. Width/length of pronotum: 1.37; width base/apex of pronotum: 1.16; width pronotum/head: 1.23; length/width of elytra: 1.62; length elytra/pronotum: 2.52.

Colour. Dark piceous to blackish, margins of pronotum and elytra and apex of elytra slightly reddish translucent. Lower urface piceous to reddish-piceous, becoming lighter to apex of abdomen. Mouth parts light reddish, legs reddish-piceous.



Figs 135a-c, e-k. *Adelotopus caniae*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Head (Figs 135a-c). Short and very wide, depressed. Anterior border barely convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders faintly oblique. Clypeal suture semicircular, though indistinct and in middle widely interrupted. Labrum large, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, feebly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna broken. Microreticulation very fine, rather superficial, puncturation very fine, difficult to see, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate, pilosity extremely fine and short. Gula apparently asetose.

Pronotum (Fig. 322). Moderately wide, rather convex, base not much wider than apex. Apical angles rather produced, fairly acute, somewhat oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, at least laterally finely bordered. Sides feebly but evenly curved, widest in basal third. Margins moderately wide, but not explanate, faintly bordered. Basal angles >100°, obtuse. Base straight, finely and irregularly bordered. Surface near base with faint transverse impression. Microreticulation fine, very superficial, difficult to detect, puncturation fine, though rather distinct, moderately dense, surface impilose, glossy.

Elytra (Figs 322, 474). Elongate, rather narrow, moderately convex, on disk slightly depressed, margins largely parallel. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed on whole length. Basal border almost complete, absent only very close to suture, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae rather short. Median striae in apical half only faintly indicated as irregular rows of rows of rather fine punctures. Microreticulation absent, puncturation rather fine, dense, becoming more distinct and even denser towards apex, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, straight, rather setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Moderately elongate, protarsus broken, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia

rather elongate and narrow, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus unknown.

♂ genitalia (Figs 135e-k). Genital ring medium-sized, triangular, rather symmetric, arms evenly convex, with rather narrow, barely asymmetric base. Sternum VII rather wide, apically gently convex, with moderately deep excision, basally slightly excised, lateral parts rather short. Aedeagus short, rather high, in middle rather widened, symmetric. Lower surface almost straight. Apex moderately wide, shortly rounded off. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Right paramere rather narrow, triangular, apex obtusely rounded, left large, considerably larger than right, with slightly triangular, rounded apex.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Holotype collected by me in November under bark of large river gum near creek.

Distribution (Fig. 612). Central eastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the type locality, the Cania Gorge.

Adelotopus rufocaudatus, spec. nov.

Figs 136, 323, 475, 612

Types. Holotype: ♂, 12 km e. Taroom, z. Qld. Austral. 17.12.1981, M. Baehr (ANIC).

Diagnosis. Medium sized, rather wide, convex, dull piceous-black species with vaguely separated reddish apex. Further distinguished by rather wide pronotum with fairly wide, though not explanate margins and shortly rounded basal angles; distinctly microreticulate, dull surface, and small, short, symmetric aedeagus with markedly rounded apex.

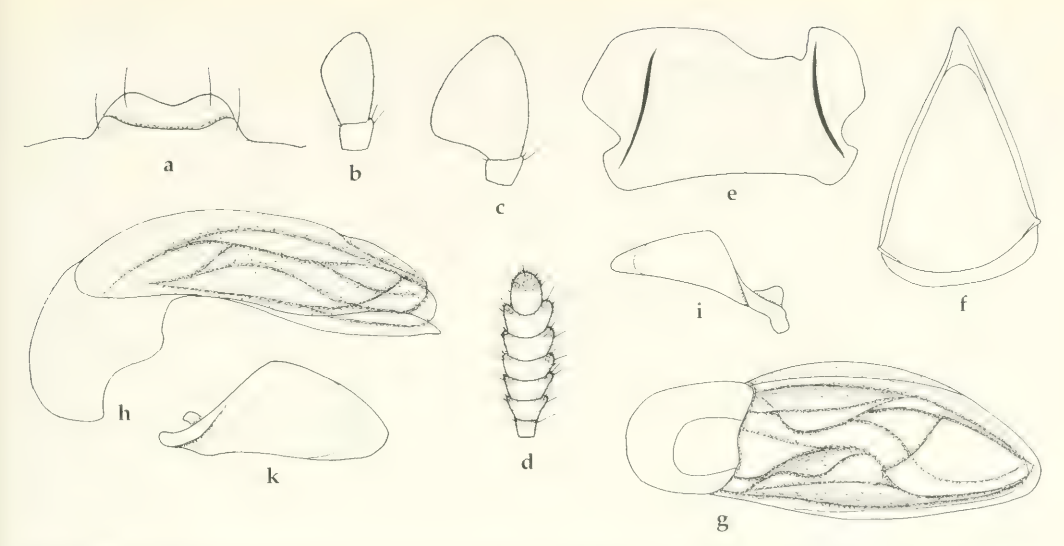
Description

Measurements. Length: 5.85 mm. Ratios. Width/length of pronotum: 1.84; width base/apex of pronotum: 1.66; width pronotum/head: 1.75; length/width of elytra: 1.39; length elytra/pronotum: 2.71.

Colour (Fig. 323). Piceous, margins of pronotum and elytra vaguely reddish translucent, apex of elytra reddish, though not well delimited. Lower surface reddish-piceous, becoming slightlxy lighter towards apex of abdomen. Mouth parts, antenna, and legs reddish-piceous, though tarsi slightly darker.

Head (Fig. 136a-d). Short and wide, moderately depressed. Anterior border fairly convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle barely interrupted. Labrum large, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, feebly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, though very distinct, puncturation very fine, difficult to detect within dense microreticulation, fairly dense. Surface with a shallow sulcus medially of eyes, impilose, fairly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 323). Rather wide, convex, base fairly wide, apex narrow. Apical angles rather produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest near basal angles. Margins moderate, not explanate, faintly bordered. Basal angles shortly rounded off. Base almost straight, faintly and irregularly bordered. Surface near base without transverse impression. Microreticulation fine, though distinct, puncturation extremely fine, difficult to see even under high



Figs 136a-k. *Adelotopus rufocaudatus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

magnification, rather sparse, surface with some very faint, irregular strioles, impilose, rather dull, somewhat silky.

Elytra (Figs 323, 475). Medium-sized, moderately convex, margins faintly convex throughout. Apex rather narrow, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately narrow, on whole length visible from above. Basal border almost complete, absent only very close to suture, ending gradually. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae in basal half absent, towards apex extremely faintly indicated as rows of very fine, rather irregular longitudinal strioles. Microreticulation fine, though distinct, slightly transverse, puncturation very fine, basally difficult to see, moderately sparse, becoming more distinct and denser towards apex, surface impilose, dull, fairly silky.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, straight, rather setose. Metepisternum short, slightly <1.5 × as long as wide, in posterior third markedly obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, slightly <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 136e-k). Genital ring medium-sized, regularlxy triangular, rather symmetric, arms barely convex, with rather narrow, barely asymmetric base. Sternum VII rather wide, apically almost straight, with deep, slightly irregular excision, basally slightly excised, lateral parts short. Aedeagus short, rather high, in middle rather widened, symmetric. Lower surface convex. Apex very wide, widely rounded off. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Both parameres markedly triangular, apex obtusely rounded, left large, considerably larger than right.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Holotype collected by me in December at light in open eucalypt forest mixed with cabbage tree palms at the border of a billabong.

Distribution (Fig. 612). Central Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the reddish apex of the elytra.

Adelotopus haemorrhoidalis Erichson, 1842
Figs 137, 324, 476, 613

Adelotopus haemorrhoidalis Erichson, 1842, p. 126; Westwood 1853, p. 407, pl. 14, fig. 3; Macleay 1863, p. 113; Blackburn 1901a, p. 18, 19; Sloane 1920, p. 177; Notman 1925, p. 8, 10, 29; Csiki 1933, p. 1635; Darlington 1968, p. 241; Moore et al. 1987, p. 51.

? *Adelotopus inquinatus* Newman, 1842, p. 366; Westwood 1853, p. 407; Lacordaire 1854, p. 154; Notman 1925, p. 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51 (doubtful synonymy).

Types. Of *haemorrhoidalis*. Lectotype (by present designation): ♀ (?), 1082, Schayer, *haemorrhoidalis* Er* Tasmania (MNHB).

Of *inquinatus*: Not found in BMNH, probably lost.

Type localities. Of *haemorrhoidalis*: "Tasmania". – Of *inquinatus*: From description: "Port Phillip S. A.", Victoria.

Note. Since the type(s) of *A. inquinatus* are probably lost and because several species compete for being *inquinatus*, this synonymy is doubtful. *Inquinatus* is therefore ranked under "doubtful species".

Diagnosis. Rather large, elogate, convex, black species with rather wide reddish apex of elytra. Distinguished from related *A. similis*, spec. nov. species by wider pronotum with relatively wider base, wider elytra, medium-sized aedeagus with rounded apex, shorter parameres, and rather wide, triangular stylomere; from *A. minor*, spec. nov. by larger size, slightly wider pronotum and elytra, slightly shorter aedeagus, shorter parameres, and distinctly triangular stylomere.

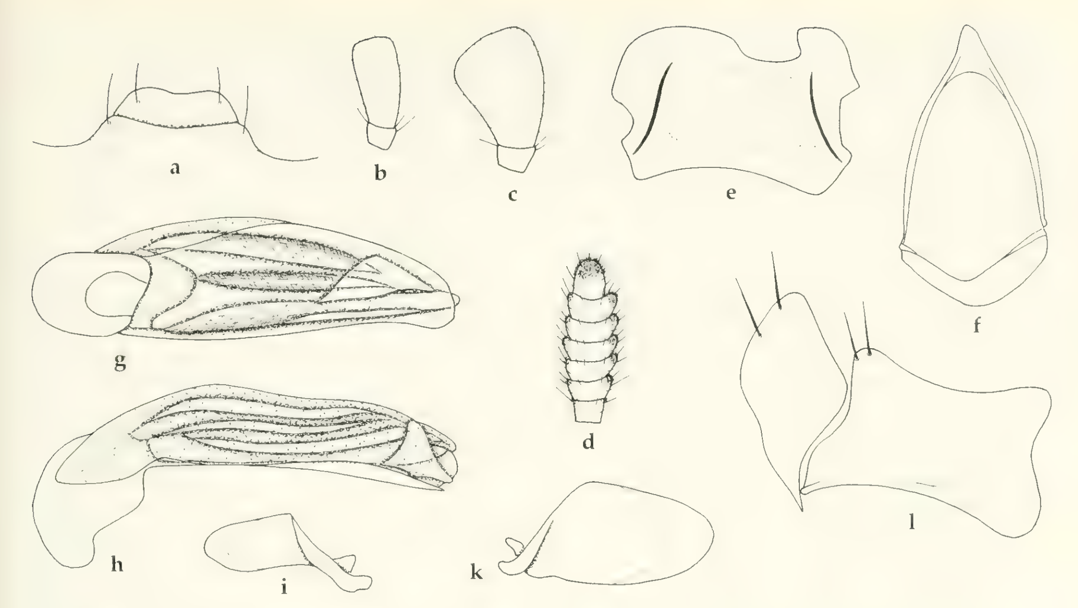
Description

Measurements. Length: 6.4-8.1 mm. Ratios. Width/length of pronotum: 1.62-1.68; width base/apex of pronotum: 1.55-1.62; width pronotum/head: 1.60-1.70; length/width of elytra: 1.60-1.68; length elytra/pronotum: 2.69-2.82.

Colour (Fig. 324). Black, sometimes margins of pronotum and elytra feebly dark reddish translucent. Elytra with well defined red apex, the anterior border of the spot distinctly concave. Lower surface of head and thorax black to dark piceous, of abdomen reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 137a-d). Short and wide, moderately depressed. Anterior border fairly convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex barely concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, barely widened, not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation fine, though distinct, puncturation extremely fine, difficult to detect even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 324). Moderately wide, convex, base fairly wide, apex narrow. Apical angles moderately produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest in basal third or fourth. Margins moderate, not explanate, faintly bordered. Basal angles evenly rounded off. Base almost straight, distinctly bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, though somewhat superficial, puncturation extremely fine, though slightly more distinct than on head, rather sparse, surface impilose, rather glossy.



Figs 137a-l. *Adelotopus haemorrhoidalis* Erichson. Details of head and genitalia. For legends see fig. 100.

Elytra (Figs 324, 476). Elongate, convex, margins rather parallel in basal half to ⅗, then gently narrowed. Apex rather wide, transverse, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately narrow, almost completely on visible from above. Basal border almost complete, ending very closely to suture, becoming very weak there. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle, sometimes with a small intercalary pore. Setae moderately elongate. Striae either completely absent, or faintly indicated as rows of extremely fine, irregular, longitudinal strioles, or as rows of very shallow impressions. Microreticulation fine, very superficial, sometimes difficult to detect even under high magnification, puncturation very fine, rather sparse, becoming more distinct and denser towards apex, surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin transverse, rather setose. Metepisternum elongate, c. 2 × as long as wide or even slightly longer, neither bent nor hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 137e-k). Genital ring medium-sized, gently triangular, rather symmetric, arms evenly convex, with rather narrow, fairly excised base. Sternum VII moderately wide, apically convex, with deep excision, basally regularly excised, lateral parts short. Aedeagus medium-sized, moderately depressed, in middle slightly widened, slightly asymmetric, apex slighty turned laterally . Lower surface straight. Apex very wide, widely rounded off. Orifice rather short, internal sac fairly complex, with a conspicuous, oblique fold at apex. Right paramere rather wide, almost parallel, apex widely rounded. Left paramere considerably larger than right, triangular, apex obtusely rounded.

♀ genitalia (Fig. 137l). Stylomere wide, distinctly triangular, with narrow, obtuse apex, with 1-4 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Some variation noted in size, relative shape, degree of striation of elytra and puncturation of surface.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. One specimen collected on "*E. stellulatum* trunks by pyrethrum spray", a single specimen collected by me under bark of gum-type eucalpt at about 1200m. So far collected from November to April and in August, most specimens, hovwever, during the period from December until February. Occurs sympatrically and even syntopically with *A. similis* (on Picadilly Circus actually on the same tree!).

Distribution (Fig. 613). Eastern Victoria, Tasmania, Australian Capital Territory, eastern New South Wales, southeastern Queensland. The latter record is perhaps close to the New South Wales border.

Material examined (38). **Vic:** 1♀, Tennyson Creek, 5 km NW of Buldah 37 14'S 149 07'E, 10.-16.I.1982 ANZSES Expedition, *Adelotopus haemorrhoidalis* Er. (NMV); 1♀, Erskine Falls near Lorne, 25.III.1971 Neboiss (NMV); 1♂, Melbourne Coll. Castelnau, det. *haemorrhoidalis* (MCSN); 1♀, *gyrinoides* Hope Melb., Melbourne Coll. Castelnau, *haemorrhoidalis* (MCSN); 1♀; Warburton F. E. Wilson 1.II.26, F. E. Wilson Collection, det. *seriepunctatus* (NMV); 1♂, Macedon C. Oke, det. *haemorrhoidalis* (NMV); 1♀, Buff. *Adelotopus haemorrhoidalis* Er. Id. by T. G. Sloane (SAMA). – **Tas:** 1♀, Launceston, 91-88, 3939, det. *haemorrhoidalis* (BMNH); 1♀, Launceston C. Oke I.1941, *Adelotopus haemorrhoidalis* Er. (NMV); 1♀, Arthur Plains S.W.Tas, 6.II.1965 Neboiss (NMV); 1♀, Hobart, J. J. Walker, det. *haemorrhoidalis* (BMNH); 1♀, G. H. Hardy, Triabunna 25.XII.1920, *Adelotopus hydrobioides* W. Id. by A. M. Lea (QMB); 1♀ (?), 1082, Schayer, *haemorrhoidalis* Er, (lectotype!) (MNHB); 1♀, 2611 A. Simson, *Adelotopus haemorrhoidalis* Erich. Id. by T. G. Sloane (SAMA). – **ACT:** 1♂, Kangaroo Ck., Corin Dam Rd, 20.II.1986 K. R. Pullen, Kim Pullen Coll. (ANIC); 1♂, 6 km E. Corin Dam, Smokes Flat, 4.IV.1980, J. F. Lawrence (CBM); 1♂, ACT 124, Brindabella Rge, 1200 m, Picadilly Circus, 10.XII.1987, M. Baehr (CBM); 1♂, 1♀, Picadilly Circus, 3650', 9.I.1983, J. Doyen, det. *haemorrhoidalis* Er. (CUIC); 1♂, Gininito Bimberi, Brindabella Ra., 28.-29.I.1980, K. R. Pullen, Kim Pullen Coll. (ANIC); 1♂, Booroomba Rocks, 6.XI.1988, J&R. Bell (UVB). – **NSW:** 1♂, The Creel. Mt. Kosc. 8000 ft, 15.XII.31, Harvard Exp. Darlington, *Adelotopus haemorrhoidalis* Er. (MCZ); 1♂, 1♀, Kosciusko, J. Sedlacek (CAS, CSB); 1♂, 1♀, Tumut R., 1500', XII.53, J. Sedlacek (CBM, CSB); 1♂, 1♀, Tumut R., 1450 m 1956, J. Sedlacek (CBM, CSB); 1♀ (?), Mul. XII.96 *inquinatus* Newm. (ANIC); 1♀, Rules Pt. H. J. Carter, II.24, *Adelotopus inquinitus* Erichs. (sic !), Id. by T. G. Sloane (ANIC); 1♂, 23.VIII.86, Isl. Bend Pondage, V. R. Bejsak lgt. (CBS); 1♀, Forest Reefs, Lea, Lea's (SAMA); 1♂, 1♀, Goniawa (?) (MMS); 1♀, Bago Forest, Barlow, 10.III.57, T. G. Campbell (ANIC). – **Qld:** 1♂, Nat. Park, 2.XI.53, F. A. Perkins (UQIC). – **Aus:** 1♀, *Adelotopus haemorrhoidalis* Erichs. Arch. 1892 126 (BMNH); 1♀, W. Edwards, *gyrinoides* Hope (MCZ).

Doubtful specimens (2). 1 (defect, sex ?), Talbingo T.G.S. ?.XII.22 (ANIC); 1 (defect, sex ?), 951, Victoria, *Adelotopus haemorrhoidalis* Erich Tasman. Vic, 29 Howitt Colln., det. *gyrinoides* (NMV).

Adelotopus minor, spec. nov.

Figs 138, 325, 477, 614

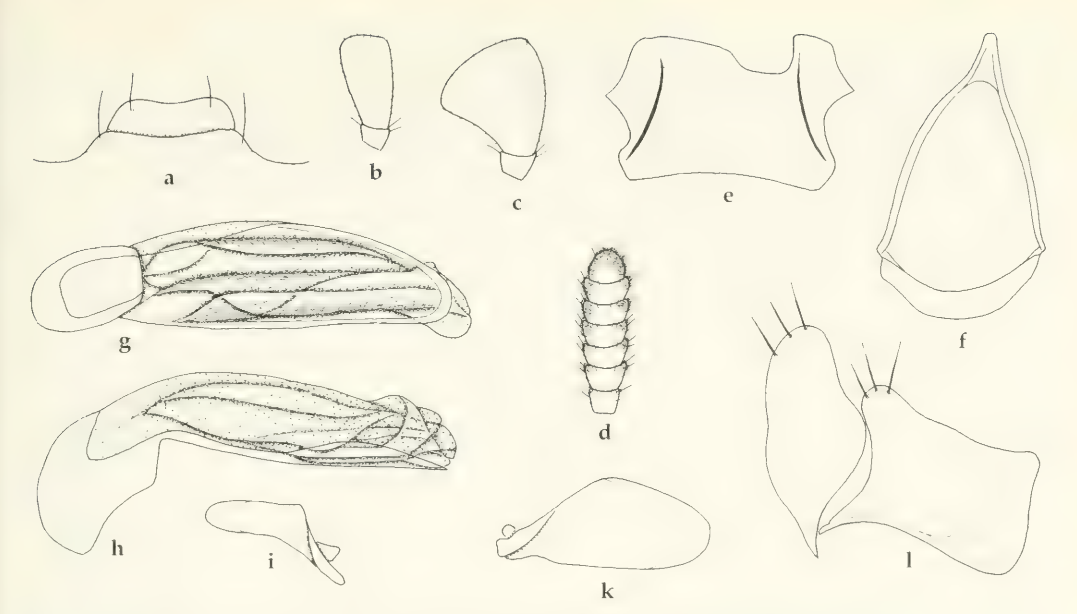
Types. Holotype: ♂, Healsville, V. C. Oke, det. *haemorrhoidalis* (NMV). – Paratypes: 1♀, Mt. Buffalo 8-22-35 Aus. (BMH); 1♀, Tasmania, A. Simson, *Adelotopus haemorrhoidalis* Er. Id. by T. G. Sloane (SAMA); 1♂, 35.30S 150.18E, Kioloa SF 15 km NE Batemans Bay, NSW Apr.87, M. G. Robinson, ex sticky trap (ANIC); 1♀, 4 N Batemans Bay 21 Oct 1952, E. F. Riek NSW (CBM); 1♀, Mooney Mooney Ck. Near Gosford N.S.W. 16 Nov 1978, D. K. McAlpine and B. J. Day (AMS); 1♀, N. Holl. Janson Acq. 1884 (MNHN); 1♂, Australie Melly, Ex Museo Chaudoir, det. *haemorrhoidalis* (MNHN).

Diagnosis. Medium-sized, elongate, convex, black species with rather wide reddish apex of elytra. Distinguished from related *A. haemorrhoidalis* Erichson by lesser size, slightly narrower pronotum with relatively narrower base, slightly narrower elytra, slightly longer aedeagus, longer parameres, and not markedly triangular stylomere; from *A. similis*, spec. nov. by lesser size, slightly wider pronotum and elytra, medium-sized aedeagus with convex apex, and wider, apically mor evenly rounded stylomere; from *A. nitens*, spec. nov. by barely concave labrum, distinct microreticulation on surface, even on elytra, less distinct pucturation of surface, only faintly indicated elytral striae not marked by distinct punctures, and less triangular stylomere.

Description

Measurements. Length: 6.0-6.3 mm. Ratios. Width/length of pronotum: 1.56-1.64; width base/apex of pronotum: 1.51-1.56; width pronotum/head: 1.55-1.65; length/width of elytra: 1.62-1.67; length elytra/pronotum: 2.63-2.70.

Colour (Fig. 325). Black, rarely margins of pronotum and elytra feebly dark reddish translucent. Elytra with well defined red apex, the anterior border of the spot distinctly concave. Lower surface of



Figs 138a-l. *Adelotopus minor*, spec. nov. Details of head and genitalia. For legends see fig. 100.

head and thorax black to dark piceous, of abdomen light reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 138a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex barely concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, barely widened, not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna rather short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation fine, though distinct, puncturation very fine, rather difficult to see even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 325). Moderately wide, convex, base fairly wide, apex narrow. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest in basal third or fourth. Margins narrow to moderate, not explanate, faintly bordered. Basal angles evenly rounded off. Base almost straight, bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, only slightly superficial, puncturation extremely fine, though slightly more distinct than on head, rather sparse, surface impilose, fairly glossy.

Elytra (Figs 325, 477). Elongate, convex, margins rather parallel in basal half to ⅗, then gently narrowed. Apex rather wide, transverse, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately narrow, almost completely on visible from above. Basal border almost complete, ending very closely to suture, becoming very weak there. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae very faintly indicated as rows of extremely fine, irregular, longitudinal strioles. Microreticulation fine, very superficial, though still visible, puncturation ine and rather sparse, becoming more distinct and denser towards apex, surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin transverse, rather setose. Metepisternum elongate, c. 2 × as long as wide or even slightly longer, neither bent nor hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wideer than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 138e-k). Genital ring medium-sized, gently triangular, rather symmetric, arms evenly convex, with rather narrow, fairly excised base. Sternum VII moderately wide, apically almost straight, with very deep excision, basally regularly excised, lateral parts short. Aedeagus medium-sized, moderately depressed, in middle slightly widened, slightly asymmetric, apex slighty turned laterally. Lower surface gently convex. Apex wide, widely rounded off. Orifice rather short, internal sac fairly complex, with a conspicuous, oblique, distinctly denticulate fold at apex. Right paramere narrow, almost parallel, apex widely rounded. Left paramere considerably larger than right, slightly triangular, apex rounded off.

♀ genitalia (Fig. 138l). Stylomere wide, but not markedly triangular, with wide, widely rounded apex, with 2-4 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. One specimen "ex sticky trap". So far collected in April, August, and from October to November. Occurs sympatrically and syntopically with *A. similis*, spec. nov.

Distribution (Fig. 614). Eastern Victoria, Tasmania, southeastern New South Wales to slightly north of Sydney.

Material examined (8). Only the type series.

Etymology. The name refers to the smaller size compared with the closely related species *A. haemorrhoidalis* Erichson.

Adelotopus nitens, spec. nov.

Figs 139, 326, 478, 614

Types. Holotype: ♀, Australia, Qld. Mt. Glorious nr. Brisbane. 635 m. 9.11.XII.1988 H. & A. Howden (NMO).

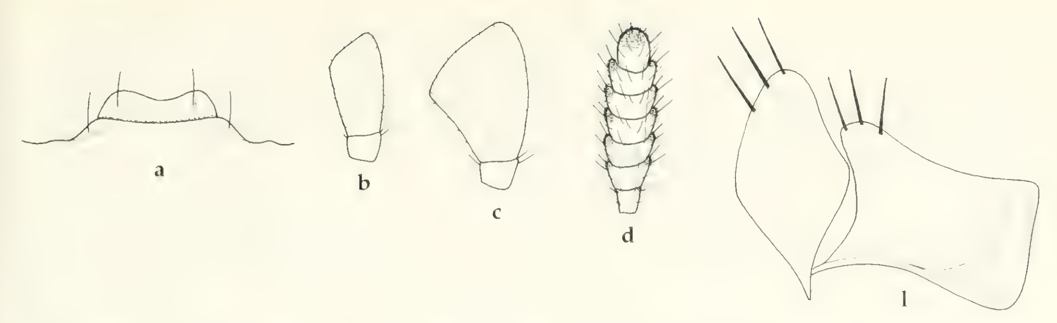
Diagnosis. Medium-sized, elongate, convex, glossy black species with rather wide reddish apex of elytra. Distinguished from all related species by markedly glossy surface, at least apically well marked, punctate elytral striae, and complete absence of microreticulation on elytra. Further distinguished from most similarly looking *A. similis*, spec. nov. by distinctly concave labrum, shorter and wide antennae with 8th and 9th antennomeres >2 × as wide as long, and rather triagonal, apically mor acute stylomere.

Description

Measurements. Length: 6.35 mm. Ratios. Width/length of pronotum: 1.58; width base/apex of pronotum: 1.51; width pronotum/head: 1.56; length/width of elytra: 1.61; length elytra/pronotum: 2.62.

Colour (Fig. 326). Black, elytra with well defined red apex, the apical border of the spot distinctly concave. Lower surface of head and thorax black to dark piceous, of abdomen light reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 139a-d). Short and wide, moderately depressed. Anterior border fairly convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture rather triagonal, not interrupted. Labrum large, apex distinctly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically slightly triangular, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on



Figs 139a-d, l. *Adelotopus nitens*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, barely widened, not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation fine, rather superficial, puncturation fine, though distinct, rather dense. Surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 326). Moderately wide, convex, base fairly wide, apex narrow. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, indistinctly bordered. Sides evenly curved throughout, widest in basal third or fourth. Margins narrow, not explanate, faintly bordered. Basal angles evenly rounded off. Base almost straight, distinctly bordered. Surface near base without transverse impression. Microreticulation very fine, highly superficial, difficult to see, puncturation fine, though distinct, rather dense, surface impilose, glossy.

Elytra (Figs 326, 478). Elongate, convex, margins rather parallel in basal half to ⅗, then gently narrowed. Apex rather wide, transverse, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately narrow, almost completely on visible from above. Basal border almost complete, ending rather abruptly closely to suture, but even there rather distinct. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae in apical half rather well marked as rows of fairly coarse, punctures, these being considerably coarser than the other punctures. Microreticulation absent, puncturation fine and rather sparse, becoming more distinct and denser towards apex, surface impilose, remarkably glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin transverse, rather setose. Metepisternum rather elongate, slightly <2 × as long as wide, neither bent nor hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 139l). Stylomere wide, rather triangular, with fairly wide, rounded apex, with 3 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected at height of 635 m in December.

Distribution (Fig. 614). Southeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the highly glossy surface.

Adelotopus sparsepunctatus, spec. nov.

Figs 140, 327, 479, 614

Types. Holotype: ♀, in garden, Atherton, Qd. 24.III.1975 J. H. Barrett, *Adelotopus gyrinoides* Hope det. B. P. Moore '80 (QMB T26065). – Paratypes: 1♂, N. Queensland, Kuranda, 1100 ft., May 3-June 20, 1913, R. E. Turner, 1913-438 (BMNH); 1♂, Millstream Falls, near Ravenshoe, N Qld 9 Jan 1976, Collr. A & M Walford-Huggins (CMP-WHC); 1♀, Australia: N. Qld 1 km NE of Tolga Jan. 1989 Storey & De Faveri light trap (DPIM); 1♀, Australien Qld, Mareeba, 19.-25.XII.1961, leg. H. Demarz (ZSM); 1♀, Qld Rifle Ck., Mt. Molloy, 12-V-1987, P. A. Meyer coll. (CBM); 1♀, Australia, Qld 93/4, Mt. Molloy, 22.5.1993, M. Baehr (CBM); 1♀, 15.47S, 145.14E, Shiptons Flat Qld, 17-19 Oct.1980, T. Weir (ANIC); 1♂, Australia, Qld 93/37, 5 km w. Annan R., 35 km sw. Cooktown, 3.6.1993, M. Baehr (CBM); 1♀, Portland Road N. Qld., 1. Jan. 1985 A & M Walford-Huggins, *Adelotopus* sp. det. B. P. Moore'86 (CMP-CWH); 1♂, Austral., Coll. Hacker, det. *haemorrhoidalis* (DEIB).

Diagnosis. Medium-sized, convex, rather glossy black species with wide, well delimited reddish apex of elytra, that is anteriorly straight. Distinguished from related species by convex shape, shortly rounded basal angle of pronotum, elytra evenly narrowed from base, almost complete basal border of elytra, reduced microreticulation and extremely fine puncturation of elytra, elongate, asymmetric aedeagus with widely rounded apex, triangular left paramere and narrow stylomere.

Description

Measurements. Length: 5.55-6.3 mm. Ratios. Width/length of pronotum: 1.66-1.75; width base/apex of pronotum: 1.53-1.58; width pronotum/head: 1.58-1.64; length/width of elytra: 1.55-1.58; length elytra/pronotum: 2.53-2.74.

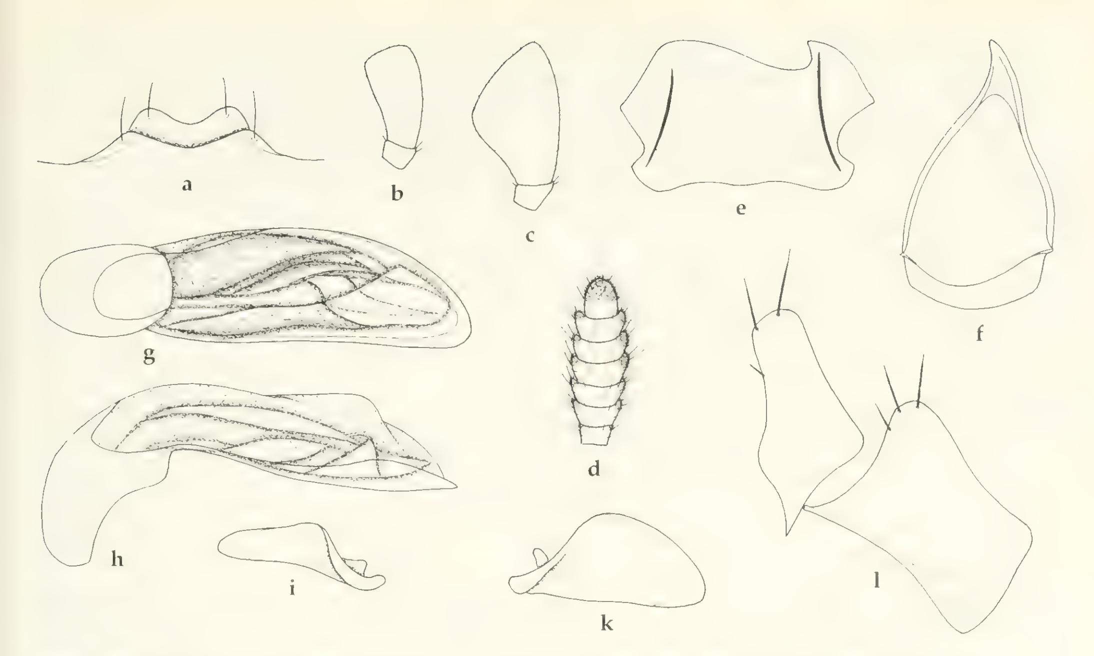
Colour (Fig. 327). Black, elytra with rather wide, well defined red apex, the anterior border of which is straight. Lower surface of head and thorax piceous, of abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi slightly darker.

Head (Figs 140a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, though distinct, puncturation extremely fine, sometims difficult to detect even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 327). Rather wide, convex, base moderately wide, apex narrower. Apical angles rather produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest at base. Margins narrow, not explanate, faintly bordered. Basal angles shrtlly rounded off. Base almost straight, faintly or irregularly bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, only slightly superficial, puncturation very fine, rather sparse, surface impilose, fairly glossy.

Elytra (Figs 327, 479). Rather elongate, highly convex, margins evenly narrowed to apex, faintly convex throughout. Apex rather narrow, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border almost complete, ending rather closely to or immediately at scutellum. Scutellar seta absent. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae including sutural stria absent. Microreticulation almost absent, only faintest traces visible, puncturation extremely fine and rather sparse, rather difficult to detect, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate,



Figs 140a-l. *Adelotopus sparsepunctatus,* spec. nov. Details of head and genitalia. For legends see fig. 100.

c. 1.7 × as long as wide, in posterior third obliquely bent and rather hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 140e-k). Genital ring rather wide, fairly symmetric, though one arm more or less sinuate, the other convex, with rather symmetric, little excised base. Sternum VII rather wide, apically obliquely convex, with rather deep excision, basally bisinuately excised, lateral parts rather short. Aedeagus rather elongate, fairly depressed, in middle barely widened, rather asymmetric, apical part slightly turned laterally. Lower surface distinctly convex. Apex wide, widely rounded off. Orifice rather elongate, internal sac fairly complex, with a large, oblique fold near apex. Right paramere narrow, elongate, with shortly rounded apex, left wide, considerably larger than right, tapering, with widely rounded apex.

♀ genitalia (Fig. 140l). Stylomere rather narrow and elongate, only slightly triangular, with obliquely rounded apex, with 2-3 subapical setae. Lateral plate rather elongate, with 2 elongate apical setae.

Variation. Apart from some differences of size there is some variation of shape and relative width of pronotum and of distinctness of puncturation of elytra.

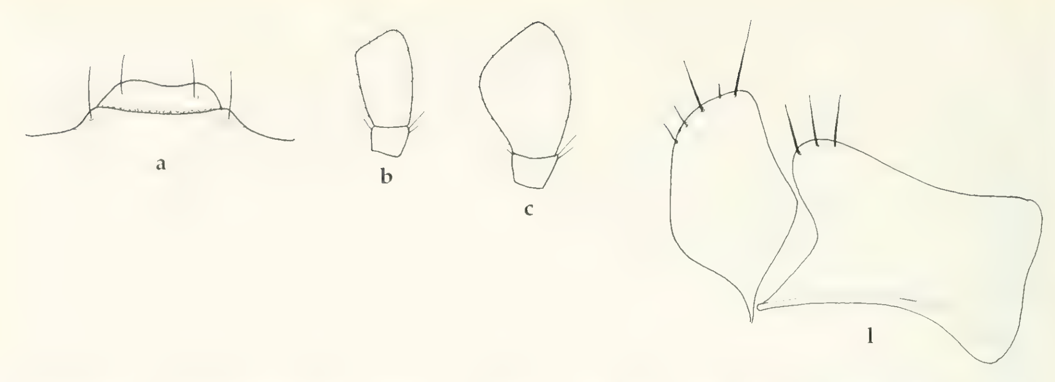
Vivipary. Not confirmed in the examined material.

Habits. Little known. Single specimens collected "under bark of gum-type eucalypt", "by sweeping", "in garden", specimens captured by me under bark of river gum or other gum-type eucalypts. So far collected during the period from October to January, in March, May, and June.

Distribution (Fig. 614). Northeastern Queensland from Atherton Tableland to south of Cooktown.

Material examined (11). Only the type series.

Etymology. The name refers to the sparse puncturation of surface.



Figs 141a-c, l. *Adelotopus semilunatus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Adelotopus semilunatus, spec. nov.

Figs 141, 328, 480

Types. Holotype: ♀, Bunawang (?), 9/../40, X (ANIC).

Diagnosis. Medium-sized, slightly depressed, blackish species with wide, semilunar, well delimited, reddish apex of elytra. Further distinguished from related species by laterally not produced head, widely rounded basal angles of pronotum, almost complete basal border of elytra, rather conspicuous mircroreticulation, and short and wide, apically obliquely transverse stylomere.

Description

Measurements. Length: 5.5 mm. Ratios. Width/length of pronotum: 1.65; width base/apex of pronotum: 1.56; width pronotum/head: 1.73; length/width of elytra: 1.55; length elytra/pronotum: 2.52.

Colour (Fig. 328). Piceous-black, lateral margins of pronotum slightly reddish translucent, elytra with rather wide, well defined, semilunar, red apex. Lower surface of head and thorax piceous, of abdomen reddish. Mouth parts and legs reddish, tibiae and tarsi brown.

Head (Figs 141a-c). Short and wide, moderately depressed. Anterior border gently convex, lateral angle evenly rounded, laterally not projecting, lateral borders almost parallel. Clypeal suture semicircular, in middle not interrupted. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna broken. Microreticulation rather distinct and fairly coarse, puncturation invisible. Surface with a shallow sulcus medially of eyes, impilose, comparatively dull. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 328). Rather wide, slightly depressed, base moderately wide, apex narrower. Apical angles rather produced, at apex obtuse, somewhat oblique, surpassing posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, faintly bordered. Sides evenly curved throughout, widest at base. Margins moderately wide, slightly explanate, faintly bordered. Basal angles evenly rounded off. Base slightly convex, distinctly bordered throughout. Surface near base without transverse impression. Microreticulation distinct, though slightly superficial, rather coarse, puncturation extremely very fine, almost invisible, surface impilose, fairly glossy.

Elytra (Figs 328, 480). Rather elongate, on disk slightly depressed, margins evenly narrowed to apex, laterally almost straight. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border almost complete, ending near scutellum. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind

shoulder and 1 additional pore at or behind middle. Setae moderately elongate. Striae including sutural stria absent, indicated only by traces of elongate lines. Microreticulation superficial, puncturation very fine and sparse, surface impilose, glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third barely bent and hollowed. Abdominal sterna with 2 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 5 × as long as wide, metatarsus unknown. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 141l). Stylomere rather wide and short, with wide, obliquely rounded apex, with 3-5 subapical setae, of which the median one is by far longest. Lateral plate rather elongate, with 3 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown.

Distribution. Unknown, because the label is neither easily readible, nor it is known, where the – doubtful – locality is located. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the semilunar reddish apex of the elytra.

Adelotopus kurandae, spec. nov.

Figs 39, 142, 329, 481, 613

Types. Holotype: ♂, Kuranda Oct, J. Sedlacek Collr. (QMB T26077).

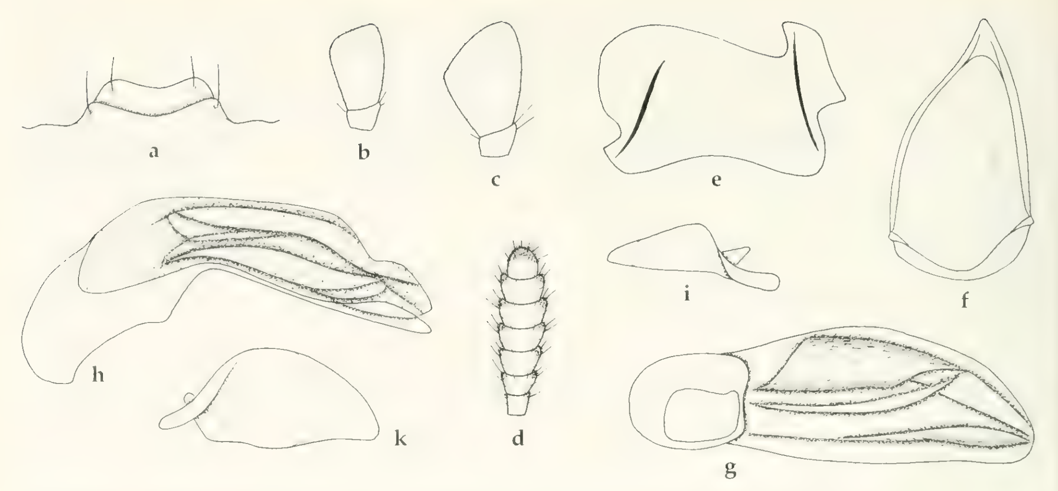
Diagnosis. Rather small, parallel, convex, black species with wide, slightly triangular, well delimited, reddish apex of elytra. Further distinguished from related species by laterally but slightly produced head, narrow pronotum with shortly rounded basal angles, almost complete basal border of elytra, reduced mircroreticulation, and short, rather symmetric aedeagus with widely rounded apex and triangular parameres.

Description

Measurements. Length: 4.95 mm. Ratios. Width/length of pronotum: 1.51; width base/apex of pronotum: 1.46; width pronotum/head: 1.47; length/width of elytra: 1.57; length elytra/pronotum: 2.42.

Colour (Figs 39, 329). Black, lateral margin of pronotum faintly reddish translucent, elytra with rather wide, well defined red apex, the anterior border of which is slightly triangular. Lower surface of head and thorax piceous, of abdomen reddish. Clypeus, mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 142a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, though distinct, somewhat superficial, puncturation extremely fine, rather difficult to detect even under high magnification, rather sparse.



Figs 142a-k. *Adelotopus kurandae*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 329). Rather narrow, highly convex, base rather narrow, slightly narrowed to apex. Apical angles moderately produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately excised, distinctly convex in excision, unbordered. Sides curved throughout, though posteriorly almost straight, widest in basal third. Margins narrow, not explanate, faintly bordered. Basal angles shortly, but evenly rounded off. Base almost straight, laterally faintly bordered. Surface near base without transverse impression. Microreticulation very fine, rather superficial, puncturation extremely fine and sparse, almost invisible, surface impilose, glossy.

Elytra (Figs 329, 481). Rather elongate, highly convex, margins almost parallel in basal half, faintly narrowed to apex. Apex rather wide, slightly oblique, truncature convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed. Basal border almost complete, ending near scutellum. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae short. Striae including sutural stria absent. Microreticulation almost absent, only faintest traces visible, puncturation fine and moderately sparse, becoming mor distinct towards apex and here, arranged into irregular rows, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, barely bent and hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 142e-k). Genital ring moderately wide, fairly symmetric, with rather asymmetric, deeply excised base. Sternum VII rather wide, apically convex, with rather deep excision, basally deeply excised, lateral parts rather short. Aedeagus rather short, in middle slightly widened, slightly asymmetric, apical part slightly turned laterally. Lower surface faintly convex. Apex wide, widely rounded off. Orifice rather elongate, internal sac fairly complex, with a large, oblique fold near apex. Both parameres triangular, taperig to apex. Right paramere considerably shorter than left.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. The holotype collected in October.

Distribution (Fig. 613). Atherton Tableland, north Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the type locality.

Adelotopus bimaculatus Macleay, 1864

Diagnosis. Medium sized, rather elongate, very convex, black species with large, hourglass-shaped red spot behind base of elytra. Further distinguished from similar *A. languidus* by narrower shape, less triangular pronotum with less explanate margins, barely microreticulate, glossy elytra, and less distinct microreticulation but more distinct puncturation on pronotum.

This species includes two subspecies, the nominate subspecies in northeastern Queensland from Mackay to Atherton Tableland, and a southern subspecies in southeastern Queensland which is clearly distinguished by shape, pattern and some minor characters of ♂ and ♀ genitalia. There is, however, a broad stripe between the nominate and the southern populations, where intermediate forms occur.

Adelotopus bimaculatus bimaculatus Macleay, 1864

Figs 143, 330, 482, 615

Adelotopus bimaculatus Macleay, 1864, p. 113; 1871, p. 94; Castelnau 1867, p. 33; 1868, p. 119; Gestro 1893, p. 287; Blackburn 1901b, p. 113; Notman 1925, p. 8, 28; Csiki 1933, p. 1634; Darlington 1968, p. 241, 242; Moore et al. 1987, p. 49.

Types. Lectotype (by present designation): ♂, Pt. Denison, Syntype, *Adelotopus bimaculatus* Macl. Pt. Denison (ANIC-MMS). – Paralectotype: 1♀, same data (ANIC-MMS).

Type locality: "Pt. Denison", Queensland.

Diagnosis. Medium-sized, rather elongate, very convex, black species with large, hourglass-shaped red spot behind base of elytra, and rather wide, laterally convex pronotum with obtusely rounded basal angles and not explanate margins. Distinguished from relative subspecies *A. bimaculatus angustior*, subspec. nov. by wider shape, more evenly rounded lateral margins of pronotum, usually hourglass-shaped, rarely posteriorly straight or even convex elytral spot, more distinct puncturation of surface, and shorter parameres, the right paramere being perceptibly shorter than the left.

Description

Measurements. Length: 4.6-6.1 mm. Ratios. Width/length of pronotum: 1.74-1.82; width base/apex of pronotum: 1.52-1.61; width pronotum/head: 1.59-1.71; length/width of elytra: 1.44-1.50; length elytra/pronotum: 2.56-2.64.

Colour (Fig. 330). Black, sometimes the narrow lateral margin of pronotum faintly reddish translucent. Elytra with a large, more or less hourglass-shaped red spot behind base, usually occupying the basal half to ⅗ of elytra. Apart from few exceptions, this spot does not reach the lateral margin or even the marginal channel. Sometimes the posterior margin of this spot is almost straight, the anterior border, however, is always deeply v-shaped. Lower surface of head and prothorax reddish-piceous, of abdomen reddish. Mouth parts, antenna, and legs reddish.

Head (Figs 143a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle widely interrupted or even absent. Labrum rather wide, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather narrow, barely widened, not securiform. Terminal palpomere of labial palpus wide, distinctly securiform. Antenna rather short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation very fine, slightly superficial, puncturation very fine, though distinct, moderately

dense, surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 330). Moderately wide, highly convex, base wide, apex fairly narrow. Apical angles moderately produced, moderately acute, obtuse at apex, slightly oblique, surpassing posterior border of eyes. Apex moderately excised, rather convex in excision, faintly bordered. Sides curved throughout, widest usually slightly in front of basal angles. Margins very narrow, apically faintly bordered. Basal angles c. 100°, obtusely rounded off. Base almost straight, usually not bordered. Surface near base without transverse impression. Microreticulation very fine, highly superficial, puncturation fine, though distinct, moderately dense, surface impilose, glossy.

Elytra (Figs 330, 482). Moderately elongate, convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, basally partly concealed. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pores absent. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae rather elongate. Striae including sutural stria absent, though in apical part inner striae more or less distinctly traceable by irregular rows of slightly larger punctures. Microreticulation absent, traces only visible near margins and apex, puncturation fine, rather sparse. Surface impilose, highly glossy.

Lower surface. Prosternal process moderately elongate, fairly wide, straight, apex moderately elongate and wide, straight, shortly setose. Metepisternum rather short, c. 1.6 × as long as wide, in posterior third obliquely bent and moderately hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly shorter than wide, tibial groove of profemur very deep, anterior plate widely overlapping the groove for almost apical ⅔, posterior border of groove sharp. Femur rather wide. Metatibia rather short, slightly >4 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 143e-k). Genital ring rather wide, triangular, feebly asymmetric, arms evenly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically gently convex, with fairly deep excision, basally gently concave, lateral parts moderately elongate. Aedeagus short, moderately depressed, in middle rather widened, slightly asymmetric. Lower surface straight, near apex gently convex. Apex rather wide, evenly rounded. Orifice rather short, internal sac fairly complex, with a large, oblique, distinctly denticulate fold at apex. Both parameres moderately elongate, right distinctly shorter than left, apex obtusely rounded. Left large, considerably larger ans slightly longer than right, with widely rounded apex.

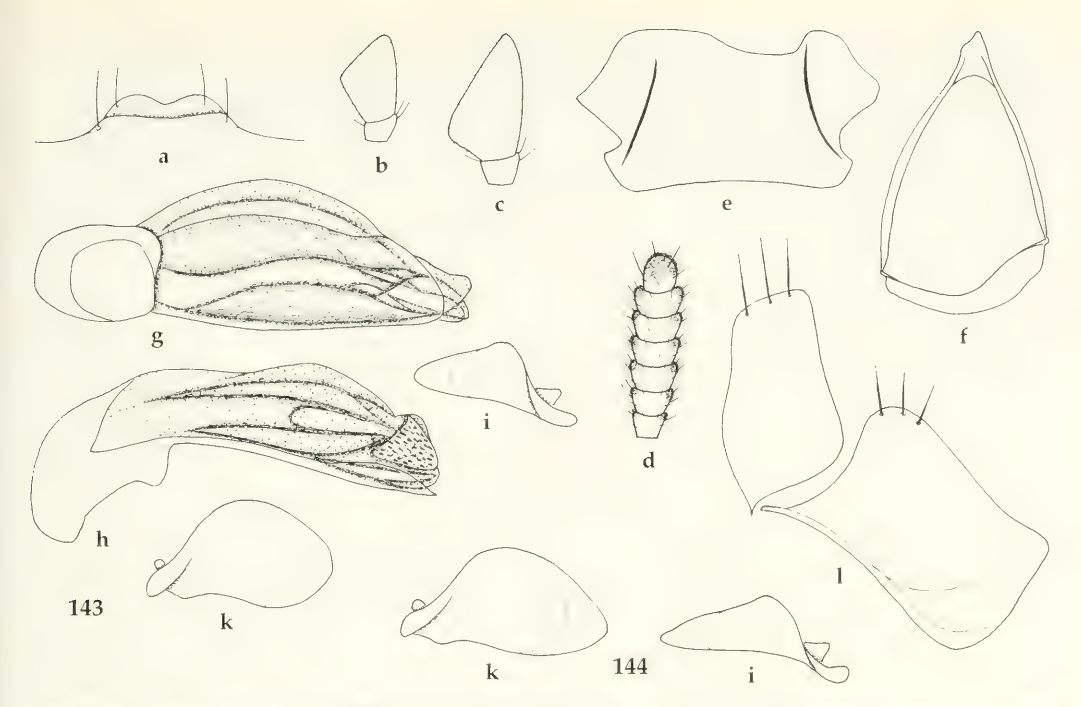
♀ genitalia (Fig. 143l). Stylomere short and wide, not triangular, with wide, rather oblique, faintly convex apex, with 2-4 subapical setae. Lateral plate moderately elongate slightly shorter than in southern subspecies, with 2-5 short apical setae.

Variation. Apart from considerable, not purely sexual variation of size, also shape of the elytral spot, relative shape of pronotum and elytra, and degree of puncturation of surface varies to some extent. In addition, the intermediate population in central eastern Queensland mentioned above is generally slightly narrower and more elongate with less triangular pronotum.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unrecorded. Specimens collected by me under bark of river gum and certain other gum-type eucalypts, some also at light. Other specimens collected in "gum forest", "under bark", and on "Euc. trunk", and in "F.I.T." (flight intercept trap). So far collected from October until March, and in June. Of the northern, typical population, however, rather few specimens have been recently captured, although the species should be rather common according to the many records.

Distribution (Fig. 615). Northern Queensland from about Mackay to Atherton Tableland. The most southerly record is slightly south of Sarina; records from "Cape York" and from Tasmania probably wrong, a record from Western Australia certainly wrong. The area between Rockhampton and Clermont in central eastern Queensland is inhabited by a population somewhat intermediate between the nominate subspecies *A. bimaculatus bimaculatus* and the southern subspecies *A. bimaculatus angustior*, but nevertheless more similar to the northern population.



Figs 143a-l. *Adelotopus bimaculatus bimaculatus* Macleay. Details of head and genitalia. For legends see fig. 100.
Figs 144i-k. *Adelotopus bimaculatus angustior*, subspec. nov. ♂ parameres. For legends see fig. 100.

Material examined (106). **Typical specimens**: **Tas:** 1♀, 608, Tasmanie, A. Simson, *Adelotopus* sp., *Adelotopus bimaculatus* Macl. dét..., *bimaculatus* W.M.L. suivant Simson (IRSNB); 1♀, 608, Tasmanie, A. Simson, *Adelotopus bimaculatus* Macl. dét... (IRSNB). – **Qld:** 2♂♂, Qld 36, 15 km sw. Sarina, 17.XI.1990, M. Baehr (CBM); 1♂, 1♀, Bowen, Janson Acq. 1884 (MNHN); 1♀, Port Bowen 75.22, det. *bimaculatus* (BMNH); 1♂, 1♀, 608 4129, Bowen A. Simson, *Adelotopus bimaculatus* Macl. By Simson's number (SAMA); 1♂, 1♀, Pt. Denison, *Adelotopus bimaculatus* Macl. lectotype!, paralectotype! (ANIC-MMS); 2♀♀, Port Denison, Ex Musaeo Mniszech, det. *bimaculatus* Macleay j (MNHN); 2♀♀, Port Denison, Coll. Castelnau, *bimaculata* M.cL.y J.or, P. Denison (MCSN); 3♀♀, Port Denison, Coll. Castelnau, *bimaculatus* M. L. J.or (MCSN); 2♀♀, 3♀♀, Port Denison, Coll. Castelnau, det. *bimaculatus* (MCSN); 2♂♂, 1♀, Townsville, det. *bimaculatus*, G. Bryant Coll. 1919 (BMNH); 1♀, Townsville, G. Bryant Coll. 1919, *Adelotopus bimaculatus* Macl. (FMT); 1♂, 2♀♀, Townsville, 23.X.02, X.02, F. P. Dodd, G. Bryant Coll. 1919, det. *bimaculatus* (BMNH); 1♂, 5♀♀, Townsville, 8.X.02, 25.X.02, F. P. Dodd (ANIC); 1♀, Townsville, 16.X.02, F. P. Dodd, E. W. Ferguson Coll. (ANIC); 1♂, 1♀, Townsville 13.XI.02, F. P. Dodd, *ephippiatus* Newm. according to Blackburn *Adelotopus bimaculatus* M. I 7137 (SAMA); 1♂, 1♀, A. 2559, Townsville, 25.X.02, F. P. Dodd, *Adelotopus bimaculatus* Macl. (SAMA); 1♂, 15 mi N. Townsville, J. Sedlacek Collector (CSB); 1♀ Charters Towers 196, J. & M. Sedlacek Collectors (BMH); 1♂, 1♀, 30 m. SSW. of Ayr, 10.X.50, E. F. Riek (ANIC); 1♀, Hidden Vy. nr. Paluma, 13.I.70, J. G. Brooks BM 88 (CMC); 1♀, Woodstock NQ. III.52 E. Sutton A. Jackson, E. Sutton Coll. (QMB); 1♀, Woodstock, N. Q., 11.XI.1951, E. Sutton (QMB); 1♀, 4 ml. Ck. Woodstock, 15.I.1975, J. M. Barrett, *Adelotopus bimaculatus* Macl. Det. B. P. Moore '79 (DPIM); 1♂, Kuranda F. P. Dodd (SAMA); 1♂, Cairns det. F. P. Dodd (SAMA); 1♂, Kuranda Atherton Tab. II.53, J. G. Brooks, K 48755, *bimaculatus* Macl. (MCZ); 1♂, Davies Ck. Rd. Atherton Tab. XII.57, Darlingtons, det. *bimaculatus* (MCZ); 1♂, 1♀, Qld 93/48, Walsh R. 20 km ssw. Mareeba, 7.VI.1993, M. Baehr (CBM); 1♂, 1♀, Qld 93/49, Walsh R. 8 km e. Dimbulah, 7.-8.6.1993, M. Baehr (CBM); 1♂, 1♀, 11 km WSW of Petford, 18.X.-15.XI.1992, P. Scammell F.I.T. (DPIM); 1♂, Cap York, Soc. Ent. Belg. Coll. PUTZEYS, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, 43585, Masters, det. *bimaculatus* (BMNH); 1♂, *bimaculatus* Macl. sec. Masters, Ex Museo H. W. Bates 1892 (MNHN); 1♂, 1♀, Simson, det. *bimaculatus* (BMNH); 1♂, Thorey 1867, Nov. Holl. bor. (NHMW). – **WA:** 1♀, Australia occid. 1192 (HNMB). – **?:** 1♀, Thorey 1837 (NHMW).

Intermediate specimens: **Qld:** 1♀, Rockhampton, Coll. Castelnau, Rockhampton, det. *bimaculatus* (MCSN); 1♀, Rockhampton III.58 Darlingtons, det. *bimaculatus* (MCZ); 4♂♂, 9♀♀, Rockhampton, 26.-27.XI.1967, J. Sedlacek Collector (BMH); 1♂, Rockhampton 26.XII.1967, J. & M. Sedlacek Collectors (BMH); 1♂, Rockhampton 16.XII.1977, J. Sedlacek Collector (CSB); 1♀, Rockhampt. Dämel, Coll. Kraatz, *Adelotopus* bimaculatus Macl. Id.

by T. G. Sloane (DEIB); 1♂, Rockhampton N. Australia Damell Higgins 10/7 (OUM); 1♂, Rockhampton (OUM); 1♀, 32 km N Rockhampton, 8.II.1964, J. Sedlacek Collector (BMH); 5♀♀, Marmor T. G. S. X.24 (ANIC); 1♀, Edungalba CQ, 20.X.45, E. Adams E. Sutton, E. Sutton Coll. 1964 (QMB); 1♀, Edungalba XII.1968 Smith leg. (BMH); 1♂, 15 km s. Marlborough, 21.I.1982, M. Baehr (CBM); 1♂, Qld 26, Mackenzie R. 79 km n. Dingo, Fitzroy Dev. Rd., 11.XI.1990, M. Baehr (CBM); 1♂, Qld G20, 5 km n. Mackenzie R., Fitzroy Dev. Rd., 12.XI.1990, leg. Gerstmeier (CBM); 2♀♀, Qld 27, Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd., 12.XI.1990, M. Baehr (CBM); 1♀, Qld 28, Isaac River, 171 km n. Dingo, Fitzroy Dev. Rd., 12.XI.1990, M. Baehr (CBM); 3♂♂, Qld 29, 215 km n. Dingo, Fitzroy Dev. Rd., 12.XI.1990, M. Baehr (CBM); 1♂, 1♀, Qld 39, 25 km s. Funnel Ck., Clermont-Marlb. Rd., 18.XI.1990, M. Baehr (CBM).

Note. This subspecies looks very similar to *A. languidus*, spec. nov. that occurs in the same area. Namely large and wide specimens of *A. bimaculatus bimaculatus* are superficially very similar. Apart from the differences in microreticulation and puncturation they can be distinguished also by the narrower and usually not distinctly reddish margins of the pronotum that are always reddish in *A. languidus*.

Adelotopus bimaculatus angustior, subspec. nov.

Figs 144, 331, 483, 615

Types. Holotype: ♂, Biggenden, XII.1973, H. Frauca (ANIC). – Paratypes: 1♀, same data (ANIC); 1♀, Sydney, R. Mus. Hist. Nat. Belg. I.G. 12 595 (IRSNB); 1♂, Stanthorpe E. Sutton, 12.X.29, E. Sutton Coll. 1964 (QMB); 1♀, Gatton, 27.V.-31 F. A. Perkins (UQIC); 1♂, Gatton 26.I.35 (UQIC); 3♀♀, Mt. Maroon, s. Qld. 400-700 m, 13.XII.81, M. Baehr (CBM); 1♀, Qld G48, Tamrookum Ck., s. Beaudesert, 26.XI.1990, leg. Gerstmeier (CBM); 2♀♀, Qld 2, 5 km s. Ipswich, 4.XI.1990, M. Baehr (CBM); 1♂, 2♀♀, Brisbane Illidge (UQIC); 1♀, Brisbane J. Sedlacek lgt. (CSB); 1♂, 1♀, Bris. 9.XI.19, 22.XI.14 (QMB); 1♀, Acacia Ridge, 19.IX.66 W. Freeland (UQIC); 2♀♀, Acacia Ridge, Brisbane, E. C. Dahms, 11.III.65, 3.VI.65 (QMB); 1♂, Acacia Ridge, 15 mls from Brisbane, 6.IV.1966, J. A. Grant. B. M./CSIRO Expedition B. M. 1973-346 (BMNH); 1♂, Upper Brookfield 10.III.62, G. Monteith (UQIC); 1♀, Greenbank 28.II.1965, T. Weir (UQIC); 2♀♀, Nth Pine R. 4.XII.62, G. Monteith (UQIC); 1♂, 1♀, Redland B. RD 27.VIII.33, J. G. Brooks Bequest, 1976 (ANIC); 1♂, 1♀, Moretonbay Stevens, Ex Musaeo Chaudoir, det. *bimaculatus* Macleay j (MNHN); 1♀, Qld G44, 30 km n. Gympie, 22.XI.1990, M. Baehr (CBM); 1♂, 3♀♀, Wide Bay, Wide Bay, Coll. Castelnau, det. *bimaculatus* (MCSN); 1♀, K 12234, *Adelotopus bimaculatus* M^c L. W. Gayndah (AMS); 1♀, Gayndah, IV.58, Darlingtons, det. *bimaculatus* (MCZ); 1♀, 16.XI.1986, Gayndah V. R. Bejsak, lgt. (CBS); 1♀, Gayndah, K 7744, det. *bimaculatus* (AMS); 1♂, Qld 56, Spring Ck., 40 km sse Biggenden, 21.XI.1990, M. Baehr (CBM); 1♂, Qld 51, Parker Ck., 20 km s. Miriam Vale, 20.XI.1990, M. Baehr (CBM); 1♂, 4♀♀, Maryborough E. W. Fischer (SAMA); 1♀, Qld 19, Burnett R., 10 km n. Eidsvold, 9.XI.1990, M. Baehr (CBM); 1♂, 2♀♀, 15.XI.1986, 20 km N. of Eidsvold V. R. Bejsak, lgt. (CBS); 1♀, 20 km N. Eidsvold V. R. Bejsak, lgt., *Adelotopus* spp. det. B. P. Moore'87 (MMS); 1♂, 15.XI.1986 Monto J. Sedlacek lgt. (CSB); 2♂♂, 2♀♀, Qld 20, Cania Gorge, 25 km nw. Monto, 9.-11.XI.1990, M. Baehr (CBM, ZSM); 1♀, Qld 50, Calliope R., 27 km se. Mt. Larcom, 20.XI.1990, M. Baehr (CBM); 1♀, Qld G38, Raglan Ck., 10 km nw. Mt. Larcom, 21.XI.1990, leg. Gerstmeier (CBM); 2♀♀, Gunaldy Q 4.XII.82, J. Sedlacek Collector (CSB); 1♀, Australia Mid Queensld., D. Sharp Coll. 1932 (BMNH); 1♂, 90 *Adelotopus bimaculatus* Macleay Queensland (OUM); 1♀, 7287 Queensl., *A. ephippiatus* Newm., *bimaculatus* Macl. according to Sloane *Adelotopus ephippiatus* N. I 7137 (SAMA); 1♀, 43867, Thorey, *bimaculatus* Mac Leay Australia, *Adelotopus* Hope Westw. (MNHB); 1♂, Australien, Coll. B. Schwarzer (SMF C 16275); 1♂, Aust. (OUM); 1♂, *Adelot. bimaculat.*, Austral. MLeay, *Adelotopus affinis* Cast., det. *bimaculatus* (MCZ); 1♂, Mitchelton 28.I.72, J. Sedlacek Collector (CSB); 1♀, Bridwell Collection, *A. maculipennis* det. T. L. Erwin (USNM).

Diagnosis. Distinguished from nominate subspecies *A. bimaculatus bimaculatus* by narrower shape, less rounded lateral margins of pronotum, usually posteriorly convex or at least straight, rarely hourglass-shaped elytral spot, even finer puncturation of surface, and longer parameres, the right paramere being as long as the left.

Description

Measurements. Length: 4.8-6.0 mm. Ratios. Width/length of pronotum: 1.61-1.70; width base/apex of pronotum: 1.43-1.49; width pronotum/head: 1.50-1.58; length/width of elytra: 1.55-1.63; length elytra/pronotum: 2.57-2.65.

Colour (Fig. 331). Black or piceous-black, margins of pronotum commonly slightly reddish translucent. Elytra with a fairly large, anteriorly v-shaped, posteriorly usually convex or at least

straight, but rarely hourglass-shaped, red spot behind base in basal half to ⅗ of elytra. Usually this spot does not reach the lateral margin or even the marginal channel. Lower surface of head and prothorax reddish-piceous, of abdomen reddish. Mouth parts, antenna, and legs reddish, femora commonly slightly lighter than tarsi.

Head. Generally similar to nominate subspecies, though antenna usually slightly shorter and wider, 8th and 9th antennomeres almost 2 × as wide as long, and puncturatiion of surface even finer, almost invisible even under high magnification.

Pronotum (Fig. 331). In most respects similar to nominate subspecies, but altogether narrower, laterally less evenly curved and less narrowed to apex. Usually also margin less incurved to basal angles. Punturation of surface even finer than in nominate subspecies.

Elytra (Fig. 331, 483). In most respects similar to nominate subspecies, though altogether more elongate and narrower and puncturation in basal half even finer.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia (Figs 144i-k). Genital ring and aedeagus rather similar to nominate subspecies. Both parameres longer with longer apex, right almost as long or as long as left, apex almost acute. Left large, with longer and less evenly rounded apex.

♀ genitalia. Rather similar to nominate subspecies, but lateral plate usually slightly longer than in nominate subspecies.

Variation. There is some variation of relative shape, especially of pronotum, of shape of elytral spot, and of degree of puncturationof surface. Altogether, however, a rather homogeneous subspecies.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gum and other gum-type eucalypts. So far collected from August through May. In southeastern Queensland a rather common species, but rarely collected in larger numbers.

Distribution (Fig. 615). Southeastern Queensland from border to about Gladstone. An old record from southern new South Wales (Sydney) is highly doubtful.

Material examined (69). Only the type series.

Etymology. The name refers to the narrower shape of this subspecies compared with the nominate subspecies.

Adelotopus languidus, spec. nov.

Figs 40, 145, 332, 484, 616

Types. Holotype: ♂, 6 km SE of Mareeba, 17.IX.-2.X.1990, S. de Faveri, Malaise trap (QMB T26058). – Paratypes: 2♀♀, same locality and collector, but 2.-16.X.1990 and 16.X.-19.XI.1990 (DPIM); 1♀, 6 km SE of Mareeba, 12.-29.III.1991 S. de Faveri MDPI F.I.T. Site 36 (DPIM); 1♂, Australia, Qld. 15 km E Mareeba 12.11.1989 H. & A. Howden (NMO); 1♀, 4 ml. Ck. Woodstock, Q 15-I-1977, J. H. Barrett, *Adelotopus bimaculatus* Macleay [Series det. by A. Walford Huggins] (CMP-WHC); 1♀, Delta Downs Stn. NQ. 2.XII.82 Walford-Hugins, *Adelotopus bimaculatus* Macleay [Series det. by A. Walford Huggins] (CMP-WHC); 1♂, Australia, Qld 93/42, Sand Flat Ck., 35 km s Palmer R., 4.-5.6.1993, M. Baehr (CBM); 1♀, Australia, Qld 93/43, Sand Flat Ck., 35 km s Palmer R., 1 km s. Hwy. to Cooktown, 5.6.1993, M. Baehr (CBM); 1♂, Australia, Qld 93/73, 5 km e. Innot Hot Springs, 14.6.1993, M. Baehr (CBM); 2♂♂, 2♀♀, Australia: Mt. Garnet N. Q., 8.XI.88, B. P. Moore, det. *bimaculatus* (CMC); 3♂♂, 2♀♀, Australia, Qld 93/61, Einasleigh R. 33 km w. Mt. Surprise, 10.-11.6.1993, M. Baehr (CBM); 2♂♂, Australia, Qld 93/63, 20 km n. Einasleigh, 11.6.1993, M. Baehr (CBM); 15♂♂, 3♀♀, Australia, Qld 93/64, Einasleigh R. 2 km e. Einasleigh, 11.-12.6.1993, M. Baehr (ANIC, BMNH, CBM, MCZ, NMV, SAMA, ZSM); 1♂, 1♀, Australia, Qld 93/66, Copperfield R. 14 km n. Kidston, 12.6.1993, M. Baehr (CBM); 2♀♀, Mc Kinnons Ck., 9 km ssw. The Lynd Jct., 13.6.1993, M. Baehr (CBM); 1♂, Normanton Qld. 10 M, March, 1982, J. Sedlacek Collector (CSB); 1♂, Australia: Hidden Vy nr. Paluma, N.Q. 13.I.70, J. G. Brooks, under bark BM 88, det. *bimaculatus* (CMC); 2♀♀, Paluma, N.Qld, 13 Jan 1970 Walford Huggins, *Adelotopus bimaculatus* Macleay [Series det. by A. Walford Huggins] (CMP-WHC); 1♂, Australia, Queensland, Mutchilba, 4.1996, leg. A. Floren (CBM); 2♂♂, Australia, Queensland, Einasleigh River, 33 km w. Mt. Surprise, 4.1996, leg. A. Floren (CBM).

Diagnosis. Medium sized, moderately elongate, rather convex, black species with large, rather hourglass-shaped red spot behind base of elytra. Further distinguished from similar *A. bimaculatus*

Macleay by wider shape, more triangular pronotum with more explanate margins, distinctly microreticulate, fairly dull elytra, and distinct microreticulation but much more indistinct puncturation on pronotum.

Description

Measurements. Length: 5.0-6.25 mm. Ratios. Width/length of pronotum: 1.82-1.86; width base/apex of pronotum: 1.62-1.66; width pronotum/head: 1.67-1.71; length/width of elytra: 1.39-1.43; length elytra/pronotum: 2.56-2.60.

Colour (Figs 40, 332). Black, the lateral margins of pronotum and elytra always distinctly reddish translucent. Elytra with a rather large, more or less hourglass-shaped red spot behind base, usually occupying the basal half to ⅗ of elytra. This spot does not reach the lateral margin or even the marginal channel. Sometimes the posterior margin of this spot is almost straight, the anterior border, however, is always deeply v-shaped. Lower surface of head and prothorax piceous, of abdomen reddish. Mouth parts, antenna, and legs reddish.

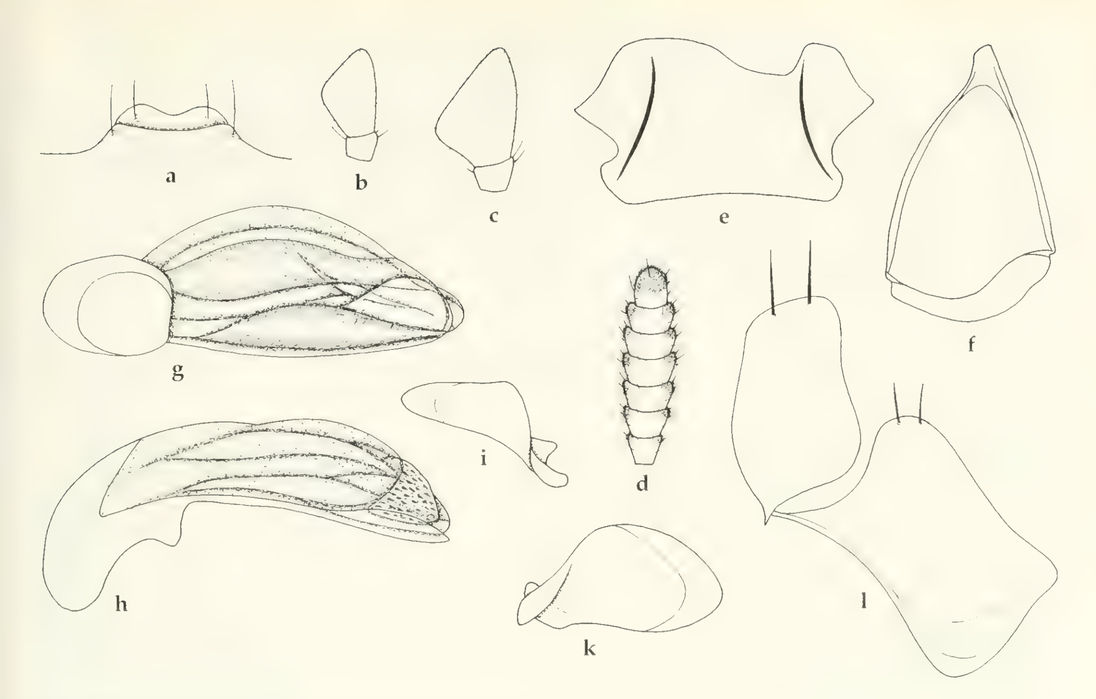
Head (Figs 145a-d). Short and rather wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle widely interrupted. Labrum rather wide, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weak carina. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather short, 8th-9th antennomeres slightly $<2\times$ as wide as long. Microreticulation very fine, distinct, puncturation extremely fine, sometimes difficult to detect even under high magnification moderately dense, surface with a shallow sulcus medially of eyes, impilose, moderately glossy to fairly dull, somewhat silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 332). Rather wide, moderately convex, base wide, apex fairly narrow. Apical angles moderately produced, moderately acute, obtuse at apex, slightly oblique, surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, laterally distinctly, in middle faintly bordered. Sides curved throughout, widest almost at basal angles. Margins more or less widely explanate, anteriorly faintly bordered. Basal angles c. 100°, obtuse. Base straight or faintly concave, faintly bordered or not bordered. Surface near base without transverse impression. Microreticulation fine and dense, distinct, puncturation very fine, sometimes almost invisible even under high magnification, moderately dense, surface with some very faint strioles, impilose, rather dull, somewaht silky.

Elytra (Figs 332, 484). Moderately elongate, convex, margins faintly convex throughout. Apex rather wide, slightly oblique, truncature almost straight, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, almost completely visible from above, at most basally slightly concealed. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pores absent. Lateral border asetose. Series of umbilical pores consisting of 6 (rarely unilaterally 5 or 7) pores behind shoulder and an additional pore behind middle that is rarely absent. Setae rather elongate. Striae including sutural stria absent, though in apical part inner striae more or less distinctly traceable by irregular rows of slightly larger, sometimes even rather coarse and somewhat rasp-like punctures. Microreticulation fine, though distinct, puncturation basally extremely fine, rather sparse, apically denser. Surface impilose, moderately glossy, slightly silky.

Lower surface. Prosternal process moderately elongate, fairly wide, straight, apex moderately elongate and wide, straight, shortly setose. Metepisternum rather short, c. $1.6\times$ as long as wide, in posterior third obliquely bent and moderately hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly shorter than wide, tibial groove of profemur very deep, anterior plate widely overlapping the groove for at least apical half, posterior border of groove sharp. Femur rather wide. Metatibia rather short, slightly $>4\times$ as long as wide, 1st tarsomere of metatarsus c. $1.8\times$ as long as wide. ♂ protarsus not widened.



Figs 145a-l. *Adelotopus languidus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

♂ genitalia (Figs 145e-k). Genital ring rather wide, triangular, feebly asymmetric, arms evenly convex, with rather narrow, asymmetric base, with elongate apex. Sternum VII wide, apically almost straight, with fairly deep excision, basally gently concave, lateral parts moderately elongate. Aedeagus short, moderately depressed, in middle rather widened, slightly asymmetric. Lower surface almost straight. Apex rather wide, evenly rounded. Orifice rather short, internal sac fairly complex, with a large, oblique, distinctly denticulate fold at apex. Both parameres moderately elongate, right as long as left, apex obtusely rounded. Left large, considerably larger than right, with widely rounded apex.

♀ genitalia (Fig. 145l). Stylomere short and wide, not triangular, with wide, rather oblique, faintly convex apex, with 2 subapical setae. Lateral plate moderately elongate, with 2 short apical setae.

Variation. Apart from some differences of size, of relative shape of pronotum and elytra, and of degree of puncturation little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Most specimens collected by me under bark of river gum and other gum-type eucalypts, one specimen captured "under bark", some specimens in Malaise trap. So far collected in October, November, January, March, and June.

Distribution (Fig. 616). Northeastern Queensland from Mt. Spec near Ingham to north of Mt. Molloy and inland across base of Cape York Peninsula to Normanton.

Material examined (50). Only the type series.

Etymology. The name refers to the rather dull, distinctly microreticulate surface.

Adelotopus clepsydra, spec. nov.

Figs 146, 333, 485

Types. Holotype: ♂, ? (unreadable), Nov. Holl. (NHRS).

Diagnosis. Small, rather elongate, very convex, dark piceous species with large, hourglass-shaped reddish spot behind base of elytra, and moderately wide, laterally rather parallel pronotum with obtuse basal angles and somewhat channeled margins. Distinguished from similarly patterned species by smaller size, narrower shape, rather narow base of pronotum, glossy surface, narrow ♂ genital ring, rather elongate aedeagus, and narrow and remarkably parallel right paramere.

Description

Measurements. Length: 4.15 mm. Ratios. Width/length of pronotum: 1.65; width base/apex of pronotum: 1.38; width pronotum/head: 1.48; length/width of elytra: 1.53; length elytra/pronotum: 2.51.

Colour (Fig. 333). Piceous to blackish, head and pronotum darker, elytra slightly lighter. Lateral margins of prionotum and elytra distinctly reddish translucent. Elytra with hourglass-shaped reddish spot behind base and occupying the basal ⅗. Lower surface basally reddish-piceous, posteriorly reddish. Mouth parts, antenna, and legs reddish.

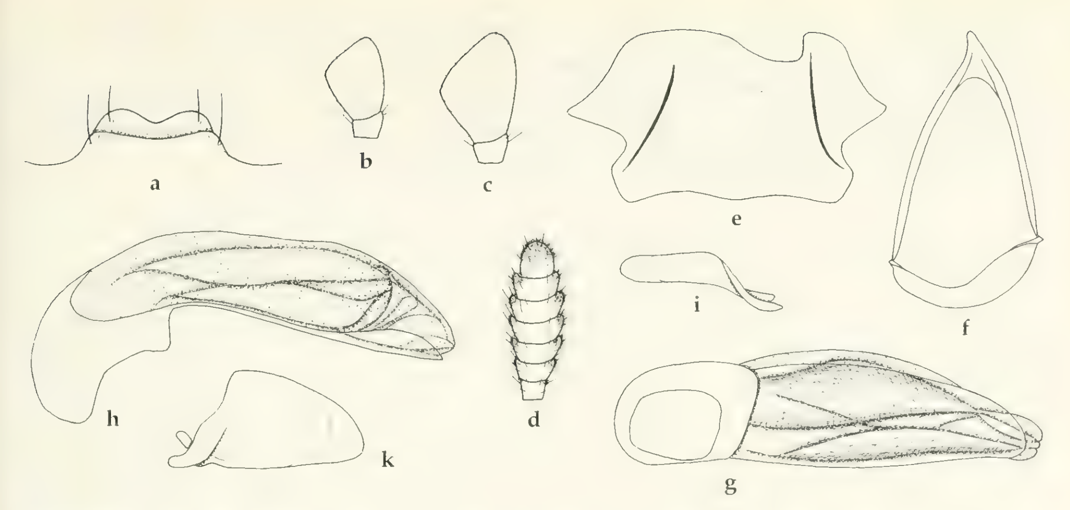
Head (Figs 146a-d). Short and rather wide, moderately depressed. Anterior border evenly convex, lateral angle rounded, laterally slightly projecting, lateral borders oblique. Clypeal suture semicircular, in middle barely interrupted. Labrum rather narrow, apex deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather short, slightly widened, faintly securiform. Terminal palpomere of labial palpus short and wide, distinctly securiform. Antenna very short, 8th-9th antennomeres >2.5 × as wide as long. Microreticulation very fine, rather superficial, puncturation extremely fine, almost invisible even under high magnification, rather sparse, surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula almost asetose.

Pronotum (Fig. 333). Rather narrow, highly convex, base not much wider than apex. Apical angles moderately produced, moderately acute, obtuse at apex, rather oblique, surpassing posterior border of eyes. Apex moderately excised, rather convex in excision, not bordered. Sides feebly curved throughout, widest in basal third. Margins rather narrow, slightly channelled, anteriorly faintly bordered. Basal angles >100°, obtuse, not rounded off. Base almost straight, laterally faintly bordered. Surface near base without transverse impression. Microreticulation very fine, highly superficial, puncturation extremely fine, almost invisible even under high magnification, rather sparse, surface impilose, glossy.

Elytra (Figs 333, 485). Moderately elongate, rather narrow, convex, margins almost parallel in basal ⅗. Apex rather wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, basally partly concealed. Basal border almost complete, absent only very close to suture, ending gradually. Scutellar pore absent. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder and 1 additional pore behind middle. Setae rather elongate. Striae including sutural stria absent, though in apical part inner striae more or less distinctly traceable by wide-spaced, irregular rows of slightly larger punctures. Microreticulation absent, puncturation extremely fine, almost invisible even under high magnification, sparse. Surface impilose, highly glossy.

Lower surface. Prosternal process moderately elongate, fairly wide, straight, apex moderately elongate, narrow, straight, shortly setose. Metepisternum rather elongate, almost 2 × as long as wide, in posterior third obliquely bent and moderately hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface apparently rather sparsely punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly shorter than wide, tibial groove of



Figs 146a-k. *Adelotopus clepsydra*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

profemur very deep, anterior plate widely overlapping the groove for almost apical ⅔, posterior border of groove sharp. Femur rather wide. Metatibia rather short, c. 4 × as long as wide, metatarsus absent. ♂ protarsus not widened.

♂ genitalia (Figs 146e-k). Genital ring rather narrow, triangular, feebly asymmetric, arms faintly convex, with rather narrow, asymmetric base. Sternum VII rather wide, apically gently convex, with deep excision, basally bisinuate, lateral parts moderately elongate. Aedeagus fairly elongate, moderately depressed, in middle slightly widened, slightly asymmetric. Lower surface straight, near apex gently convex. Apex rather wide, evenly rounded. Orifice rather short, internal sac fairly complex, with a large, oblique fold at apex. Right paramere elongate, narrow, almost parallel, apex obtusely rounded. Left paramere very large, much larger than right, with widely rounded apex.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown.

Distribution. Unknown. The label is unreadible, the type locality is Australia ("Nov. Holl.").

Material examined (1). Only the holotype.

Etymology. The name refers to the hourglass-shaped elytral pattern.

multipunctatus-group

Diagnosis. Medium-sized, convex, completely black species or black species with red apex. Labrum bisetose; glossa c. 10-12-setose; lateral margin of pronotum narrow, not explanate, basal angle obtuse or shortly rounded off; basal border line of elytra incomplete, usually ending halfways to suture, rarely slightly longer, sometimes not well visible; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores and 1 postmedian pore, very rarely (in *A. debitor* Darlington from New Guinea only) without the postmedian pore; abdominal sterna with 1 ambulatory seta on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus always rather wide, slightly asymmetric, with widely rounded apex; internal sac of aedeagus complex, with oblique fold near apex; apical margin of ♀ tergum VIII without elongate setae.

Larvae. 1st instar larva known of 1 species.

Distribution. 12 species in eastern Queensland, the northernmost parts of the Northern Territory and Western Australia, Papua New Guinea, the Solomon Islands (Guadalcanal), and Malaysia and Java.

Systematic position. This group is very similar to the *politus*-group, it is, however, more apomorphic in the abbreviated basal border of the elytra. It is perhaps the adelphotaxon of the *obsoletus*-group, and it is also closely related to the outstanding *villosus*-group.

Adelotopus multipunctatus, spec. nov.

Figs 147, 334, 486, 616

Types. Holotype: ♂, 14.04S, 131.59E, Ferguson R., 31 km SE by S of Pine Creek N. T. 14 Nov.1979, T. Weir (ANIC). – Paratypes: 1♂, Australia: N. T. Arnhem Land Maningrida, 5 m, 19.III.1961, Gross, J. L. & M. Gressitt Collectors (BMH); 1♀, Australia, NT 95/53, 3 km w. Mary River, 30.8.1995, M. Baehr (CBM); 1♂, Australia, NT 95/9, Litchfield NP, 30 km w. Batchelor, 6.8.1995, M. Baehr (CBM); 1♂, Australia, NT 95/51, Litchfield NP, 30 km w. Batchelor, 29.9.1995, M. Baehr (CBM); 3♂♂, NT 95/48, 30 km n. Edith River Cr., 28.8.1995, M. Baehr (CBM); 1♀, Katherine N. T. IV.71, J. Sedlacek Collector (CSB); 1♂, Australia: Northern Terr.: Katherine, 19-20.III.1971, J. &. M. Sedlacek, Colls. BISHOP Museum (BMH); 1♀, Australien, NT, Katherine Gorge, 6.-8.11.1984, M. & B. Baehr (CBM); 1♂, Australia, N. T. Victoria R. Crossing 30 m, X-22-1962, Collectors E. S. Ross & D. A. Cavagnaro (CAS); 1♀, N.T. Victoria R crossing of Victoria Hwy, 11 Nov.1984 M. Malipatil (MNTD); 1♂, Australia, NT 95/44, Victoria River, 5 km w. Victoria River Cr., 25.8.1995, M. Baehr (CBM); 1♂, 1♀, Junction of Ord & Dunham R. W. A. 19.II.1971. A. Allwood, 11420, 11421 (MNTD); 1♂, Australia, WA 95/26, Galvans Gorge, 10 km sw. Mt. Barnett, 13.8.1995, M. Baehr (CBM); 1♀, W. Aust. Kimberley Lennard River Xing Gibb River Road 17.29S, 124.44E 4 April 1988 T. F. Houston 679-1 (WAM 94/878).

Diagnosis. Rather small to medium-sized, fairly wide, moderately convex, glossy black species. Further distinguished from related species by the rather wide pronotum with moderate lateral margins and widely rounded basal angles, incomplete basal border of elytra, complete absence of microreticulation, fine and rather dense puncturation, highly glossy surface, and short and wide aedeagus with very wide, rounded apex.

Description

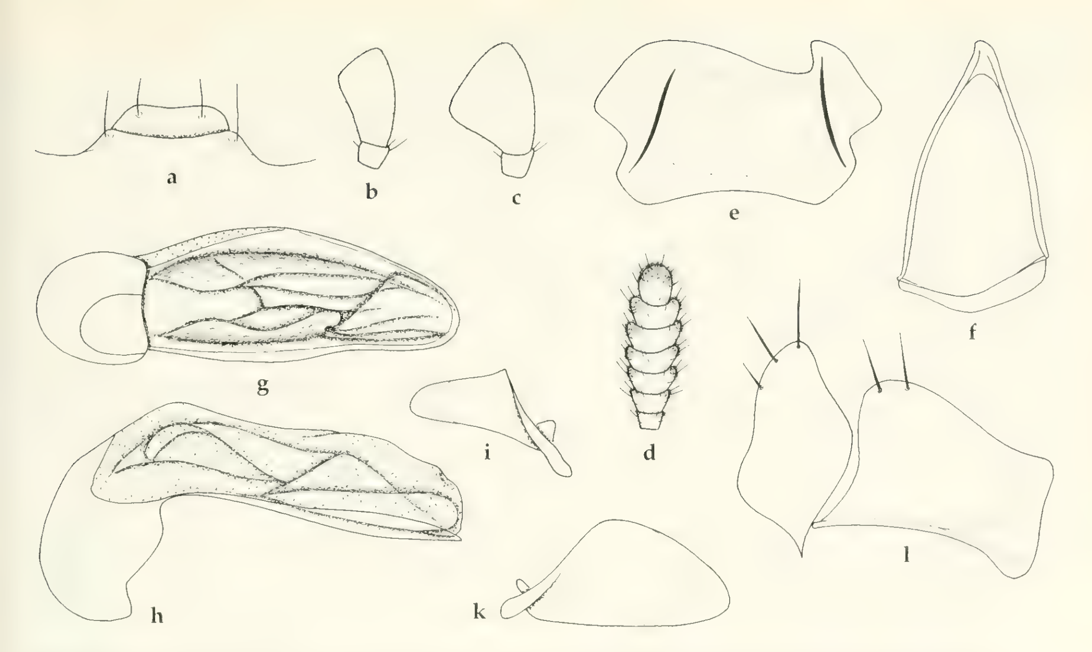
Measurements. Length: 4.7-6.1 mm. Ratios. Width/length of pronotum: 1.74-1.83; width base/apex of pronotum: 1.51-1.57; width pronotum/head: 1.53-1.59; length/width of elytra: 1.38-1.44; length elytra/pronotum: 2.50-2.57.

Colour. Glossy black, sometimes margins of pronotum and elytra reddish translucent. Lower surface of head and thorax piceous, of abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi slightly darker.

Head (Figs 147a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally fairly projecting, lateral borders slightly oblique. Clypeal suture semicircular, in middle interrupted, very inconspucous. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation absent, puncturation fine, fairly dense. Surface with a shallow sulcus medially of eyes, impilose, markedly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 334). Wide, moderately convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, surpassing posterior margin of eyes. Apex moderately excised, convex in excision, very faintly bordered. Sides strongly and evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles rather widely rounded off. Base slightly convex, faintly bordered. Surface near base without transverse impression. Microreticulation absent, puncturation very fine, dense, surface impilose, highly glossy.

Elytra (Figs 334, 486). Moderately elongate, moderately convex, regularly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal



Figs 147a-l. *Adelotopus multipunctatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

channel rather narrow, partly concealed. Basal border incomplete, reaching about to median third between lateral border and suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation very fine, rather dense, sometimes in apical third arranged to irregular rows of slightly larger punctures, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly narow, straight, gently convex, apex slightly widened, margin depressed, slightly convex, feebly setose. Metepisternum rather short, c. 1.5 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 147e-k). Genital ring rather narrow, barely asymmetric, with slightly asymmetric, narrow, barely excised base. Sternum VII rather wide, apically almost straight, with rather deep excision, basally excised, lateral parts rather short. Aedeagus short, rather convex, in middle slightly widened, slightly asymmetric. Lower surface convex. Apex very wide, evenly rounded off. Orifice moderate, internal sac fairly complex, with a large, oblique fold near apex. Both parameres triangular, with shortly rounded apex, left paramere wide, considerably larger than right.

♀ genitalia (Fig. 147l). Stylomere rather wide, apex wide, shortly rounded off, with 2-3 elongate subapical setae. Lateral plate moderately elongate, with 1-3 elongate apical setae.

Variation. Some variation noted in size and relative width of pronotum.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of gum-type eucalypt, another species "on trunk of *Eucalyptus* sp. *camaldulensis*". So far captured in October, November, and from February to April.

Distribution (Fig. 616). Northern part of Northern Territory, Kimberley Division, adjacent northwestern Australia.

Material examined (18). Only the type series.

Etymology. The name refers to the dense puncturation of the surface.

Adelotopus ovatus, spec. nov.

Figs 41, 148, 335, 487, 616

Types. Holotype: ♂, 15.39S 144.31E Split Rock QLD 18 Aug.-16 Sep. 1993 Malaise Trap P. Zborowski & S. Shattuck (QMB T26063). – Paratypes: 1♂, 15.39S 144.31E Split Rock QLD Malaise Trap 26 June-16 July 1993 K. Halfpapp & S. De Faveri (DPIM); 1♂, 15.39S 144.31E Split Rock QLD 13 Dec 1992-18 Feb 1993 Malaise Trap P. Zborowski (CBM); 1♀, 15.39S 144.31E Split Rock QLD 10 Oct-18 Nov 1993 Malaise Trap P. Zborowski & M. Horak (DPIM); 1♀, 15.10S 145.07E, 3.5 km SW by S Mt. Baird QLD, 3-5 May 1981, A. Calder, at light (ANIC).

Diagnosis. Medium-sized, wide, moderately convex, glossy black species. Further distinguished from related species by the wide pronotum with rather wide lateral margins and widely rounded basal angles, short and regularly narrowed elytra, incomplete basal border of elytra, almost complete absence of microreticulation, very fine and sparse puncturation, and glossy surface.

Description

Measurements. Length: 5.6-6.1 mm. Ratios. Width/length of pronotum: 2.03-2.06; width base/apex of pronotum: 1.64-1.68; width pronotum/head: 1.73-1.78; length/width of elytra: 1.28-1.33; length elytra/pronotum: 2.60-2.69.

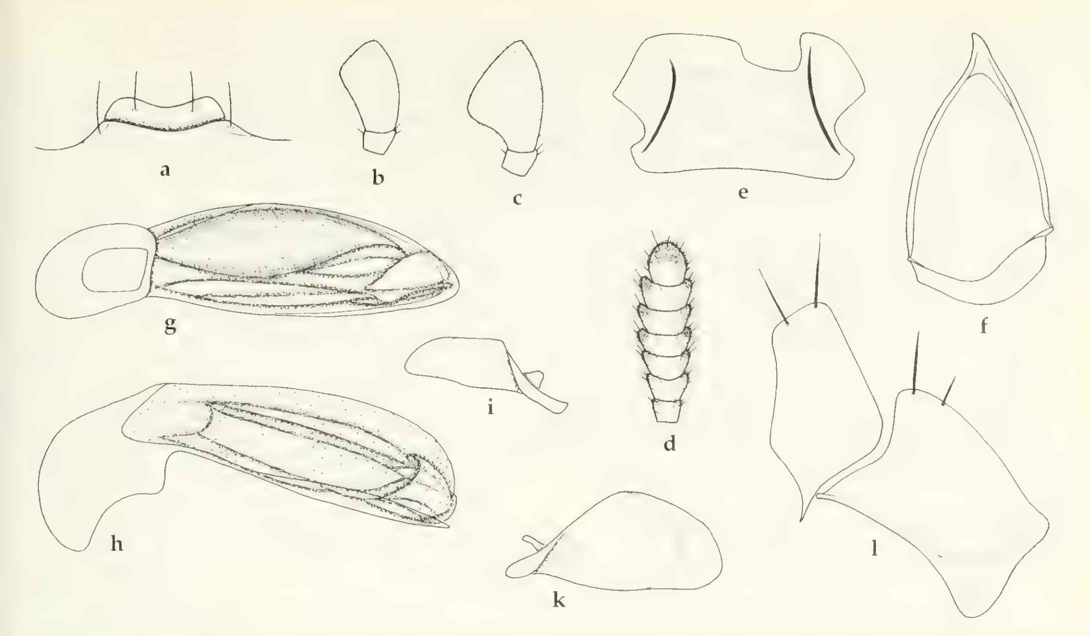
Colour. Black. Lower surface piceous-black. Mouth parts, antennae, and legs reddish-piceous.

Head (Figs 148a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally fairly projecting, lateral borders distinctly concave and oblique. Clypeal suture not visible. Labrum rather large, apex concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine and somewaht superficial, puncturation extremely fine, fairly sparse. Surface with a shallow sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 335). Very wide, moderately convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, surpassing posterior margin of eyes. Apex moderately excised, convex in excision, laterally faintly bordered, in middle unbordered. Sides strongly and evenly curved throughout, widest in posterior third, even slightly narrowed to base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles rather widely rounded off. Base straight, distinctly bordered. Surface near base without transverse impression. Microreticulation almost absent, only finest traces visible, puncturation very fine, sparse, surface impilose, glossy.

Elytra (Fig. 335, 487). Rather short and wide, moderately convex, though depressed on disk, regularly narrowed to apex, margin faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles shortly rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel fairly wide, barely concealed. Basal border incomplete, reaching about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 or 7 closely set pores behind shoulder and 1 additional pore behind middle. Setae rather short. Striae including sutural stria absent, though inner striae in apical half faintly marked by irregular rows of extrenely fine longitudinal lines. Microreticulation absent, puncturation extremely fine, sparse, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex markedly widened, margin depressed, slightly convex, feebly setose. Metepisternum rather short, c. 1.5 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.



Figs 148a-l. *Adelotopus ovatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia medium-sized, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia (Figs 148e-k). Genital ring rather narrow, barely asymmetric, with rather asymmetric, narrow, slightly excised base. Sternum VII rather wide, apically almost straight, with deep excision, basally faintly excised, lateral parts rather short. Aedeagus short, rather convex, in middle slightly widened, almost symmetric. Lower surface faintly convex. Apex wide, evenly rounded off. Orifice elongate, internal sac fairly complex, with a very strongly sclerotized, large fold and an oblique fold near apex. Both parameres triangular, with obliquely rounded apex, left paramere wide, considerably larger than right.

♀ genitalia (Fig. 148l). Stylomere rather short and wide, lateral border straight, apex wide, obliquely cut off, with 2 elongate subapical setae. Lateral plate moderately elongate, with 2 elongate apical setae.

Variation. Apart from some differences in size and shape of pronotum and elytra, very little variation noted.

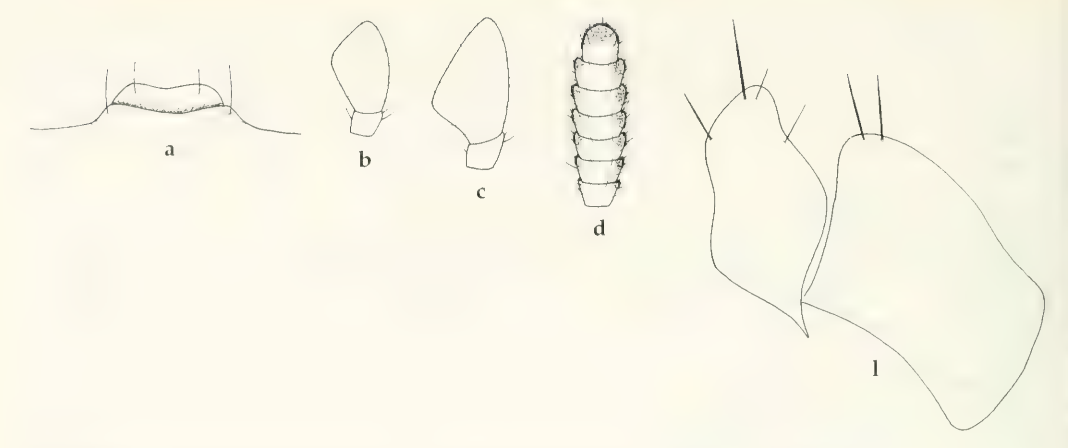
Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. So far collected only in malaise traps and at light. Captured from May to February.

Distribution (Fig. 616). Northeastern Queensland, in a very limited area at the base of the Cape York Peninsula.

Material examined (5). Only the type series.

Etymology. The name refers to the oviform body shape.



Figs 149a-d, l. *Adelotopus browni*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Adelotopus browni, spec. nov.
Figs 149, 336, 488, 617

Types. Holotype: ♀, NT, Humpty Doo 12°35'S 131°05'E, Mt. Mortgage, 3 Dec 1991-17 Jan 92, Wells & Webber (MNTD).

Diagnosis. Medium-sized, fairly narrow, rather convex, glossy black species. Further distinguished from related species by the rather elongate shape, rather shortly rounded basal angles of pronotum, incomplete basal border of elytra, complete absence of microreticulation, very fine and inconspicuous puncturation, highly glossy surface, and the presence of an additional small seta on the lateral margin of the stylomere.

Description

Measurements. Length: 5.8 mm. Ratios. Width/length of pronotum: 1.73; width base/apex of pronotum: 1.46; width pronotum/head: 1.50; length/width of elytra: 1.55; length elytra/pronotum: 2.69.

Colour. Glossy black. Lower surface of head and thorax almost black, of abdomen bright reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi darker.

Head (Figs 149a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally fairly projecting, lateral borders slightly oblique. Clypeal suture semicircular, in middle interrupted, very inconspucous. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres c. 2.25 × as wide as long. Microreticulation absent, puncturation extremely fine, fairly dense. Surface with a shallow sulcus medially of eyes, impilose, markedly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 336). Moderately wide, convex, base fairly wide, moderately narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, surpassing posterior margin of eyes. Apex moderately excised, convex in excision, faintly bordered. Sides evenly curved throughout, widest slightly in front of base. Margins rather narrow, barely explanate, faintly bordered. Basal angles narrowly rounded off. Base straigth, distinctly bordered. Surface near base without transverse impression. Microreticulation absent, puncturation extremely fine, moderately dense, surface impilose, highly glossy.

Elytra (Figs 336, 488). Rather elongate, convex, slightly narrowed to apex, laterally faintly convex

throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, slightly surpassing reaching middle between lateral border and suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae rather short. Striae including sutural stria absent, only indicated near apex by indistinct rows of slightly coarser punctures. Microreticulation absent, puncturation extremely fine, moderately dense, near apex slightly coarser, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly narrow, straight, gently convex, apex slightly widened, margin depressed, slightly convex, feebly setose. Metepisternum c. 1.6 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 short seta on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 1491). Stylomere rather wide, apex wide, shortly rounded off, with 2 elongate subapical setae and 1 or 2 smaller seta(e) on the lateral margin. Lateral plate rather elongate, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Holotype collected in "Malaise trap" in the period of December-January.

Distribution (Fig. 617). Northern part of Northern Territory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. Named in honour of the curator who made available the specimen.

Adelotopus jacobsoni Ritsema, 1909

Figs 150, 337, 489, 657

Adelotopus jacobsoni Ritsema, 1909, p. 255; Seidlitz 1912, p. 150 (*jacobsonis*); Notman 1925, p. 8, 29; Csiki 1933, p. 1635; Darlington 1968, p. 240.

Types. Holotype: ♂, E. Jacobson, Tandjong Priok, Java Nov. 1908, *Adelotopus jacobsoni* Rits. type!, *Adelotopus jacobsoni* Rits. Det. Ritsema, Holotypus (NNML).

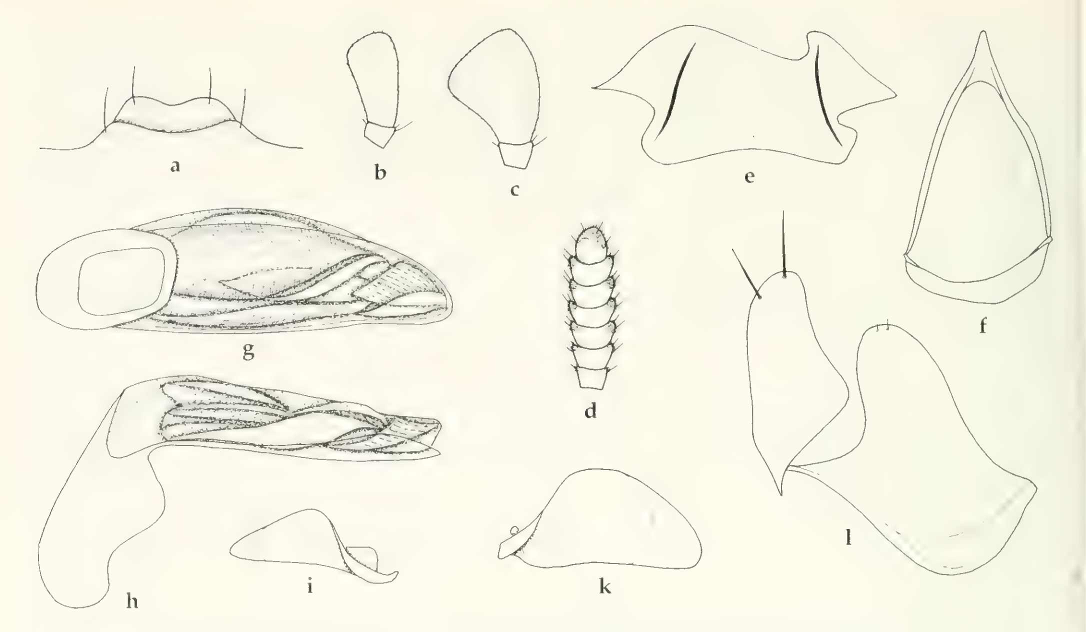
Type locality. "Tandjong Priok", Java.

Diagnosis. Medium-sized, convex, rather glossy black species with wide, well delimited reddish apex of elytra. Distinguished from related species by convex shape, shortly rounded basal angle of pronotum, elytra evenly narrowed from base, rediuced microreticulation and extremely fine punctuation of elytra, wide, apically very convex ♂ sternum VII with remarkbly long and acute lateral parts, and aedeagus with conspicuously denticulate, oblique fold within apex of internal sac, and triangular parameres.

Description

Measurements. Length: 5.9-6.35 mm. Ratios. Width/length of pronotum: 1.66-1.77; width base/apex of pronotum: 1.54-1.55; width pronotum/head: 1.55-1.57; length/width of elytra: 1.51-1.52; length elytra/pronotum: 2.56-2.70.

Colour (Fig. 337). Black, margins of pronotum and elytra faintly dark reddish translucent. Elytra with wide, well defined red apex, the anterior border of the spot distinctly concave. Lower surface of head and thorax black to dark piceous, of abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi slightly darker.



Figs 150a-l. *Adelotopus jacobsoni* Ritsema. Details of head and genitalia. For legends see fig. 100.

Head (Figs 150a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle shortly rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle rather widely interrupted. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, though distinct, puncturation very fine, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 337). Rather wide, convex, base moderately wide, apex narrower. Apical angles rather produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest at base. Margins narrow, not explanate, faintly bordered. Basal angles shrtlly rounded off. Base almost straight, faintly or irregularly bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, only slightly superficial, puncturation very fine, rather sparse, surface impilose, fairly glossy.

Elytra (Figs 337, 489). Rather elongate, highly convex, margins evenly narrowed to apex, faintly convex throughout. Apex rather narrow, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae including sutural stria absent. Microreticulation almost absent, only faintest traces visible, puncturation extremely fine and rather sparse, rather difficult to detect, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third obliquely bent and rather hollowed. Abdominal sterna with

1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 150e-k). Genital ring medium-sized, asymmetric, one arm straight, the other convex, with rather narrow, little excised base. Sternum VII wide, apically evenly convex, with deep excision, basally regularly excised, lateral parts elongate and very acute. Aedeagus medium-sized, fairly depressed, in middle slightly widened, slightly asymmetric, apical part slightly turned laterally. Lower surface gently convex. Apex wide, widely rounded off. Orifice rather elongate, internal sac fairly complex, with a conspicuously denticulate, oblique fold near apex. Both parameres wide, triangular with obtuse, shortly rounded apex, left considerably larger than right.

♀ genitalia (Fig. 150l). Stylomere rather narrow and elongate, only slightly triangular, with obliquely rounded apex, with 2 subapical setae. Lateral plate rather elongate, with 2 tiny apical setae.

Variation. Apart from some differences in relative width of pronotum little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Little known. The three specimens from the Castelnau Collection were collected "sous les ecorces"; the tree species, however, is unknown.

Distribution (Fig. 657). Malaysia, Java.

Material examined (4). **Malaysia:** 2♂♂, 1♀, Malacca Coll. Castelnau (CBM, MCSN). – **Java**: 1♂, E. Jacobson, Tandjong Priok, Java Nov. 1908, *Adelotopus jacobsoni* Rits. type!, holotype! (NNML).

Adelotopus geminus, spec. nov.

Figs 42, 151, 338, 490, 617

Types. Holotype: ♀, Australien, Qld 44, Cooberrie, 15 km n. Yeppoon, 19.11.1990, M. Baehr (ANIC).

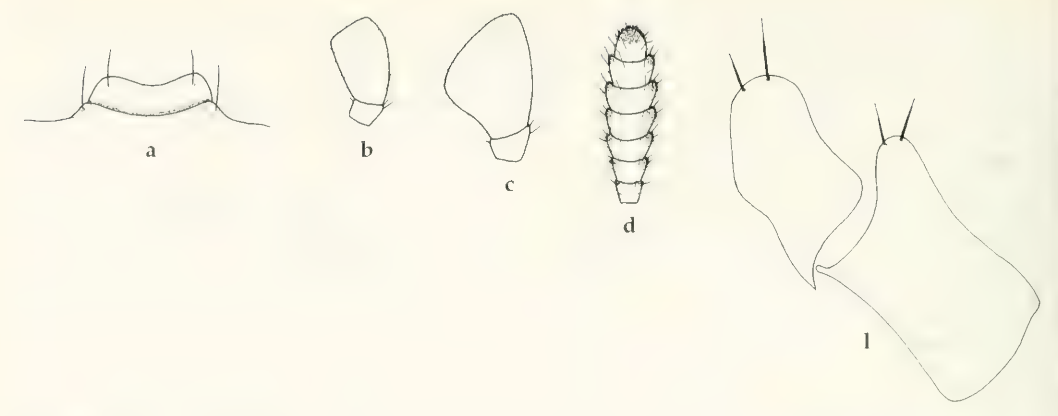
Diagnosis. Medium-sized, convex, rather glossy black species with wide, well delimited reddish apex of elytra, that is anteriorly straight. Distinguished from most closely related *A. laticaudatus*, spec. nov. by narrower pronotum, more distinct microreticulation of pronotum and elytra, shorter, anteriorly slightly convex reddish apex of elytra, stylomere without additional short setae in middle of lateral margin, and longer and basally less curved lateral plate of stylomere.

Description

Measurements. Length: 6.3 mm. Ratios. Width/length of pronotum: 1.66; width base/apex of pronotum: 1.55; width pronotum/head: 1.58; length/width of elytra: 1.58; length elytra/pronotum: 2.67.

Colour (Figs 42, 338). Black, elytra with rather wide, well defined red apex, the anterior border of which is straight. Lower surface of head and thorax dark piceous, of abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi slightly darker.

Head (Figs 151a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, though distinct, puncturation extremely fine, rather difficult to detect even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.



Figs 151a-d, l. *Adelotopus geminus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Pronotum (Fig. 338). Rather wide, convex, base moderately wide, apex narrower. Apical angles rather produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest at base. Margins narrow, not explanate, faintly bordered. Basal angles obtusely rounded off. Base almost straight, laterally faintly bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, slightly superficial, puncturation very fine, rather sparse, surface impilose, fairly glossy.

Elytra (Figs 338, 490). Rather elongate, highly convex, margins evenly narrowed to apex, faintly convex throughout. Apex rather narrow, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending rather abruptly about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae moderately elongate. Striae including sutural stria absent. Microreticulation very superficial, puncturation extremely fine and sparse, rather difficult to detect, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third obliquely bent and rather hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 151l). Stylomere rather wide and short, with wide, rounded apex, with 2 subapical setae. Lateral plate rather elongate, ventrally straight, with 2 elongate apical setae.

Variation. Unknown.

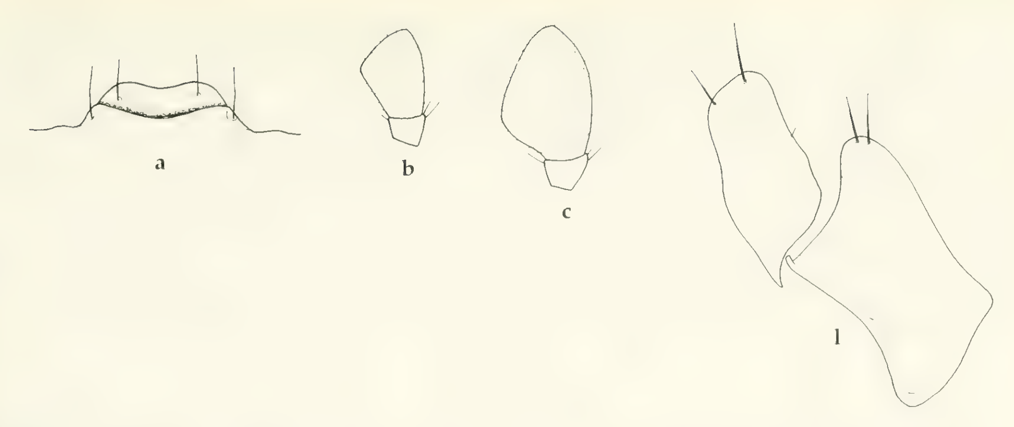
Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. The holotype collected in November under bark of gum-type eucalypt.

Distribution (Fig. 617). Central eastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the remarkable external similarity with *A. laticaudatus*, spec. nov.



Figs 152a-c, l. *Adelotopus laticaudatus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Adelotopus laticaudatus, spec. nov.

Figs 152, 339, 491, 617

Types. Holotype: ♀, 11.45S 142.35E Heathlands QLD 08 Dec 1992-19 Feb 1993 Malaise Trap P. Zborowski (QMB T26059).

Diagnosis. Medium-sized, convex, rather glossy black species with very wide, well delimited reddish apex of elytra, that is anteriorly somewhat sinuate and incised at suture. Distinguished from most closely related *A. geminus*, spec. nov. by wider pronotum, more superficial microreticulation of pronotum and elytra, stylomere with additional short setae in middle of lateral margin, and slightly shorter and basally markedly curved lateral plate of stylomere.

Description

Measurements. Length: 6.3 mm. Ratios. Width/length of pronotum: 1.75; width base/apex of pronotum: 1.51; width pronotum/head: 1.61; length/width of elytra: 1.49; length elytra/pronotum: 2.62.

Colour (Fig. 339). Black, elytra with wide, well defined red apex, the anterior border of which is somewhat sinuate and prolonged posteriorly along suture. Lower surface of head and thorax dark piceous, of abdomen reddish. Mouth parts, antennae, and legs piceous, tibiae and tarsi even slightly darker.

Head (Figs 152a-c). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, almost complete. Labrum large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Both antennae partly broken, but even basal antennomeres very short and wide. Microreticulation very fine, somewhat superficial, puncturation extremely fine, rather difficult to detect even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, impilose, rather glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 339). Rather wide, convex, base rather wide, apex narrower. Apical angles rather produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, convex in excision, unbordered. Sides evenly curved throughout, widest near base. Margins narrow, not explanate, faintly bordered. Basal angles obtusely rounded off. Base almost straight, in middle slightly produced, laterally faintly bordered. Surface near base without transverse impression. Microreticulation extremely fine and superficial, difficutl to detect, puncturation very fine, rather sparse, surface impilose, glossy.

Elytra (Figs 339, 491). Rather elongate, convex, margins parallel in anterior half, then gently narrowed to apex. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending gradually slightly medially of middle of base. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 pore behind middle. Setae moderately elongate. Striae including sutural stria absent. Microreticulation extremely superficial, barely perceptible, puncturation extremely fine and sparse, rather difficult to detect, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, rather depressed, apex wide and rather short, margin depressed, rather setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third obliquely bent and rather hollowed. Abdominal sterna with 1 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 1521). Stylomere rather wide, with wide, rounded apex, with 2 subapical setae and an additional, short seta in middle of lateral margin. Lateral plate rather elongate, basally strongly concave, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Holotype collected during the period from December-February in "Malaise trap".

Distribution (Fig. 617). Northern part of Cape York Peninsula, northernmost Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the wide reddish apex of the elytra.

Adelotopus debitor Darlington, 1968

Figs 153, 340, 492, 618, 655

Adelotopus debitor Darlington, 1968, p. 241, fig. 154.

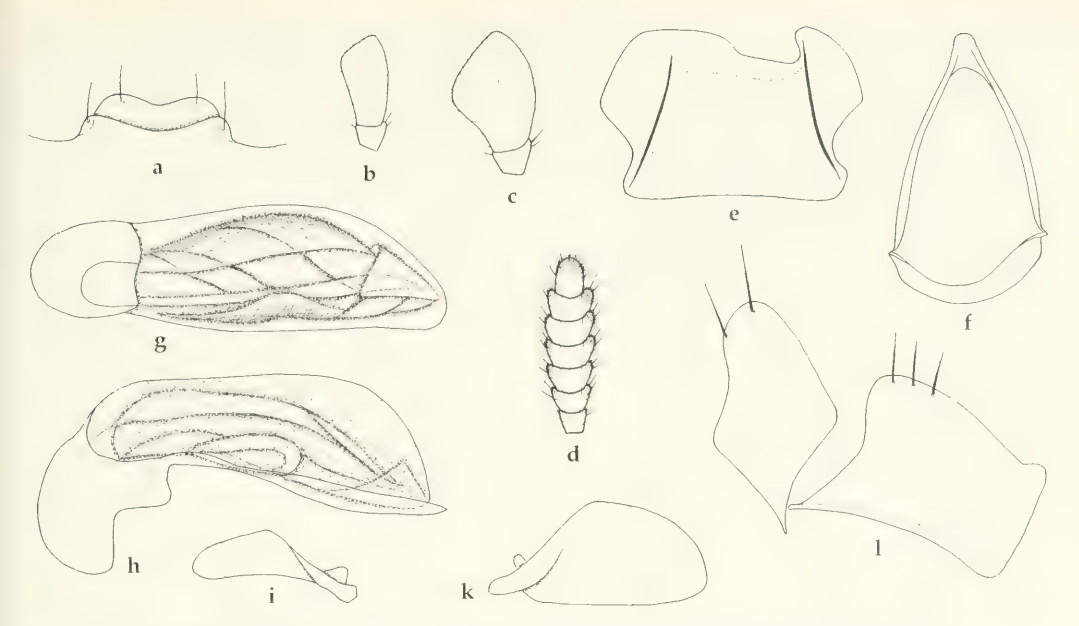
Types. Holotype (not seen): sex ?, Ne New Guina, Wau, Morobe Dist., 1200 m, Jan. 16.1961, Sedlacek (BMH). – Paratype: ♂, Papua, Kokoda. Pitoki, 450 m, 24.III.1956, J. L. Gressitt Coll. Paratype *Adelotopus debitor* D. borrowed by Bishop Mus. (MCZ).

Type localities: "Wau" and "Kokoda-Pitoki", Papua New Guinea.

Diagnosis. Medium sized, wide, moderately convex, glossy black species with very wide, well delimited, reddish apex of elytra the border of which is slightly oblique and faintly prolonged posteriorly along suture. Further distinguished from related species by wide pronotum with evenly rounded basal angles, characteristically tapering elytra with incomplete basal border, superficial microreticulation, very fine puncturation, absence of postmedian marginal pore of elytra, and short and wide, rather asymmetric aedeagus with convex lower surface and a triangular fold in internal sac. Further distinguished from related *A. nitidior*, spec. nov. by presence of microreticulation on elytra, larger aedeagus, and shorter and wider parameres; and from *A. yorkensis*, spec. nov. by larger size, wider pronotum, and more asymmetric aedeagus.

Description

Measurements. Length: 5.15-5.85 mm. Ratios. Width/length of pronotum: 1.84-1.89; width base/apex of pronotum: 1.54-1.58; width pronotum/head: 1.60-1.65; length/width of elytra: 1.49-1.50; length elytra/pronotum: 2.77-2.83.



Figs 153a-l. *Adelotopus debitor* Darlington. Details of head and genitalia. For legends see fig. 100.

Colour (Fig. 340). Black, margins of pronotum and elytra reddish translucent, elytra with rather wide, well defined red apex, the anterior border of which is slightly oblique and faintly prolonged backwards along suture. Lower surface of head and thorax dark piceous, of abdomen reddish. Mouth parts, antennae, and legs dark reddish to piceous, tibiae and tarsi piceous.

Head (Figs 153a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine and superficial, puncturation extremely very fine, rather difficult to detect, fairly sparse. Surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 340). Wide, rather convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, very convex in excision, laterally faintly bordered, in middle irregularly bordered. Sides strongly and evenly curved throughout, widest in basal third or near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles shortly though evenly rounded off. Base slightly convex, distinctly bordered. Surface near base without transverse impression. Microreticulation extremely fine and superficial, puncturation very fine, fairly sparse, surface impilose, glossy.

Elytra (Figs 340, 492). Moderately elongate, moderately convex, regularly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder only. Setae rather short. Striae including sutural stria absent. Microreticulation very superficial, puncturation extremely fine, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and

rather short, margin depressed, slightly convex, feebly setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface mderately punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 153e-k). Genital ring rather narrow, barely asymmetric, with slightly asymmetric, fairly excised base. Sternum VII rather wide, apically almost straight, with rather deep excision, basally faintly excised, lateral parts rather short. Aedeagus shorzt, rather convex, in middle widened, slightly asymmetric. Lower surface convex. Apex rather wide, evenly rounded off. Orifice elongate, internal sac fairly complex, with a large, oblique fold near apex. Right paramere short and rather narrow, with shortly rounded apex, left paramere wide, considerably larger than right, with obliquely rounded apex.

♀ genitalia (Fig. 153l). Stylomere rather wide, apex wide, convex, with 2 elongate subapical setae. Lateral plate rather short, with 2-3 elongate apical setae.

Variation. Some variation noted only in relative width of pronotum and degree of microreticulation of surface.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen captured in "Malaise Trap". So far collected during the period from January to March and from end of August to beginning of September.

Distribution (Figs 618, 655). Papua New Guinea.

Material examined (4). **NG:** 1♂, Papua, Kokoda. Pitoki, 450 m, 24.III.1956, J. L. Gressitt Coll. Paratype *Adelotopus debitor* D. borrowed by Bishop Mus. (MCZ); 1♀, J. H. Sedlacek Malaise Trap. Bishop, New Guinea: SE Popondetta, 60 m, 31.VIII.-4.IX.63, *Adelotopus* cf. *debitor* D. det. Darlington 69 (BMH); 1♀, Bulolo, 15.I.-14.II.1979, 800 m, J. Sedlacek (CBM); 1♂, N. Guinea NE, Kuper Ra. 1.80 m, 25 km SE Sanau (?), J. H. Sedlacek Coll. *Adelotopus debitor* Darlington, det. G. Ball 1989 (BMH).

Adelotopus nitidior, spec. nov.

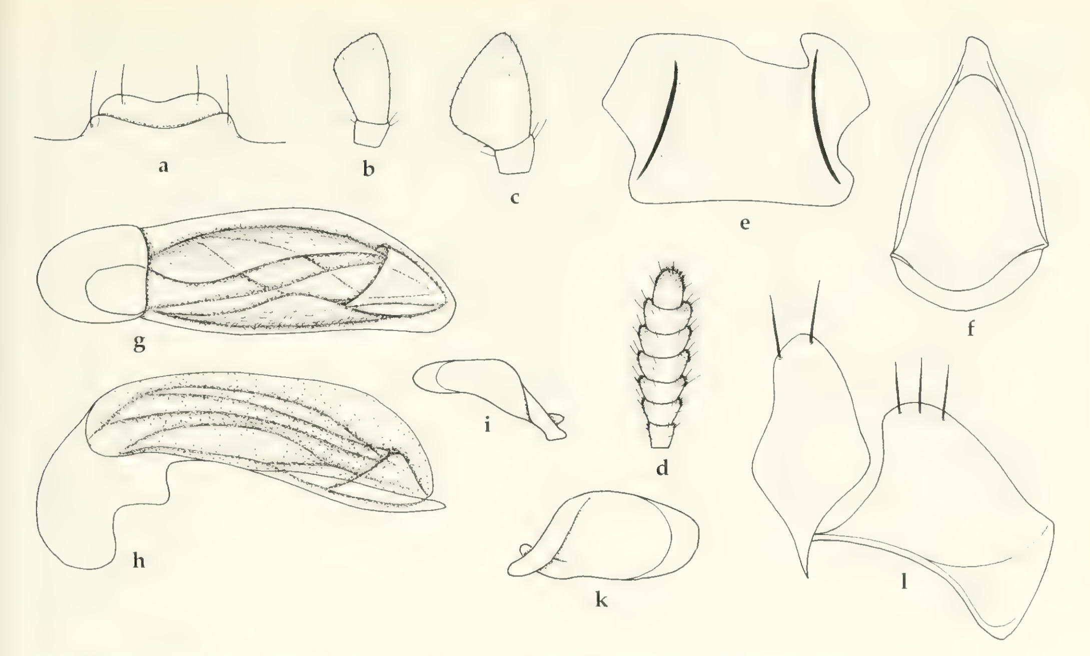
Figs 43, 154, 341, 493, 618

Types. Holotype: 1♂, 15.29S, 145.16E, Mt. Cook Nat. P. Qld, 11-12 Oct 1980, T. Weir (ANIC). – Paratypes: 1♀, Australia, Qld. 93/27, Lakeland NP, Cabbage Tree Ck., 20 km e. Old Laura, 30.5.1993, M. Baehr (CBM); 1♂, 15.16S, 144.59E, 14 km W by N. Hope Vale Mission Qld, 7-10 May 1981, A. Calder (ANIC); 1♂, Australia, Qld 93/29, Normanby R., 40 km w. Hope Vale, 31.5.1993, M. Baehr (CBM); 1♂, N. Queensld., *Adelotopus haemorrhoidalis* ER., coll. Hacker (DEIB); 2♂♂, Endeavour R. Queensland (MMS); 1♂, 1♀, V. de Poll, Cooktown (ANIC); 1♀, 15.10S, 145.07E, 3.5 km SW by S Mt. Baird Qld, 3-5 May 1981, A. Calder, by sweeping (ANIC); 1♀, Australia, Qld. 93/42, Sand Flat Ck., 30 km s. Palmer R., 1 km s. Hwy. to Cooktown, 5.6.1993, M. Baehr (CBM); 1♀, Nth. Qld. Mulligan Hwy Station Ck., 28:XI:1970 A. & M. Walford-Huggins 5375 (CMP-WHC); 1♂, Australia, Qld 93/4, Mt. Molloy, 22.5.1993, M. Baehr (CBM).

Diagnosis. Medium sized, wide, moderately convex, glossy black species with very wide, well delimited, reddish apex of elytra the border of which is slightly oblique and faintly prolonged posteriorly along suture. Further distinguished from related species by wide pronotum with evenly rounded basal angles, characteristically tapering elytra with incomplete basal border, very superficial or even absent microreticulation, very fine puncturation, and short and wide, rather asymmetric aedeagus with convex lower surface and a triangular fold in internal sac. Further distinguished from related *A. debitor* Darlington by presence of postmedian marginal pore of elytra, absence of microreticulation on elytra, smaller aedeagus, and longer and narrower parameres; and from *A. yorkensis*, spec. nov. by larger size, wider pronotum, and more asymmetric aedeagus.

Description

Measurements. Length: 5.25-5.8 mm. Ratios. Width/length of pronotum: 1.76-1.90; width base/apex of pronotum: 1.50-1.61; width pronotum/head: 1.54-1.64; length/width of elytra: 1.46-1.55; length



Figs 154a-l. *Adelotopus nitidior*, spec. nov. Details of head and genitalia. For legends see fig. 100.

elytra/pronotum: 2.7-2.8.

Colour (Figs 43, 341). Black, margins of pronotum and elytra sometimes weakly reddish translucent, elytra with rather wide, well defined red apex, the anterior border of which is slightly oblique and faintly prolonged backwards along suture. Lower surface of head and thorax dark piceous, of abdomen reddish-piceous, becoming reddish towards apex. Mouth parts, antennae, and legs dark reddish to piceous, tibiae and tarsi piceous.

Head (Figs 154a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine and superficial, puncturation very fine, rather difficult to detect, fairly sparse. Surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 341). Wide, rather convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, very convex in excision, laterally faintly bordered, in middle irregularly bordered. Sides strongly and evenly curved throughout, widest in basal third or near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles shortly though evenly rounded off. Base slightly convex, distinctly bordered. Surface near base without transverse impression. Microreticulation extremely fine and highly superficial, puncturation very fine, fairly sparse, surface impilose, glossy.

Elytra (Figs 341, 493). Moderately elongate, moderately convex, regularly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind

shoulder and 1 postmedian pore. Setae rather short. Striae including sutural stria absent. Microreticulation virtually absent, puncturation extremely fine, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, feebly setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface mderately punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 154e-k). Genital ring rather narrow, barely asymmetric, with slightly asymmetric, fairly excised base. Sternum VII rather wide, apically almost straight, with rather deep excision, basally faintly excised, lateral parts rather short. Aedeagus small, short, rather convex, in middle widened, slightly asymmetric. Lower surface convex. Apex rather wide, evenly rounded off. Orifice elongate, internal sac fairly complex, with a large, oblique fold near apex. Right paramere rather narrow, with shortly rounded apex, left paramere moderately wide, considerably larger than right, with obliquely rounded apex.

♀ genitalia (Fig. 154l). Stylomere rather wide, apex wide, convex, with 2 elongate subapical setae. Lateral plate rather short, with 2-3 elongate apical setae.

Variation. Rather variable with respect to relative width and shape of pronotum and elytra.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of river gums and other gum-type eucalypts. One specimen collected "by sweeping". So far captured in May, June, October, and November.

Distribution (Fig. 618). Southeastern part of lower Cape York Peninsula from Mt. Molloy to Lakeland NP, northeastern Queensland.

Material examined (13). Only the type series.

Etymology. The name refers to the more nitid surface in comparison with the closely related *A. debitor* Darlington from New Guinea.

Adelotopus yorkensis, spec. nov.

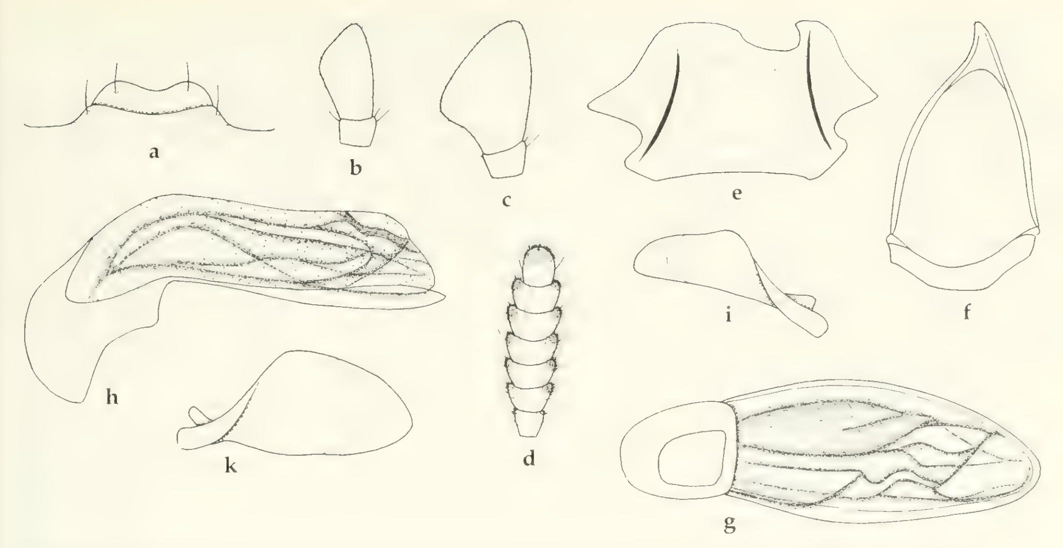
Figs 155, 342, 494, 618

Types. Holotype: ♂, 11.45S, 142,35E Heathlands QLD 08 Dec 1992-19 Feb 1993 Malaise Trap P. Zborowski (QMB T26066).

Diagnosis. Medium sized, wide, moderately convex, glossy black species with very wide, well delimited, reddish apex of elytra the anterior border of which is concave. Further distinguished from related species by moderately wide pronotum with evenly rounded basal angles, characteristically tapering elytra with incomplete basal border, very superficial microreticulation, very fine puncturation, and short and wide, rather symmetric aedeagus with convex lower surface and a triangular fold in internal sac. Further distinguished from related *A. debitor* Darlington by smaller size, narrower pronotum, presence of postmedian marginal pore of elytra, and symmetric aedeagus; and from and *A. nitidior*, spec. nov. by smaller size, narrower pronotum, presence of traces of microreticulation on elytra, and symmetric aedeagus.

Description

Measurements. Length: 4.85 mm. Ratios. Width/length of pronotum: 1.7; width base/apex of pronotum: 1.49; width pronotum/head: 1.55; length/width of elytra: c. 1.48; length elytra/pronotum: 2.48.



Figs 155a-k. *Adelotopus yorkensis*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Colour (Fig. 342). Black, elytra with rather wide, well defined red apex, the anterior border of which is slightly concave. Lower surface of head and thorax dark piceous, of abdomen reddish. Mouth parts, antennae, and legs dark reddish to piceous, tibiae and tarsi piceous.

Head (Figs 155a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle angulately rounded, laterally slightly projecting, lateral borders distinctly oblique. Clypeal suture semicircular, in middle interrupted. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna very short, 8th-9th antennomeres almost 2.5 × as wide as long. Microreticulation very fine, puncturation fine though distinct, fairly sparse. Surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 342). Rather wide, rather convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, very convex in excision, laterally faintly bordered, in middle irregularly bordered. Sides strongly and evenly curved throughout, widest in basal third. Margins fairly wide, slightly explanate, faintly bordered. Basal angles shortly though evenly rounded off. Base slightly convex, distinctly bordered. Surface near base without transverse impression. Microreticulation extremely fine and superficial, puncturation very fine, fairly sparse, surface impilose, glossy.

Elytra (Figs 342, 494). Moderately elongate, moderately convex, regularly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 postmedian pore. Setae rather short. Striae including sutural stria absent. Microreticulation extremely fine and superficial, only traces visible, puncturation very fine, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, feebly setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third obliquely bent and deeply hollowed. Abdominal sterna with

1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 155e-k). Genital ring rather narrow, slightly asymmetric, with slightly asymmetric, fairly excised base. Sternum VII wide, apically almost straight, with rather deep excision, basally faintly excised, lateral parts very elongate. Aedeagus small, short, rather convex, in middle gently widened, almost symmetric. Lower surface gently convex. Apex rather wide, evenly rounded off. Orifice elongate, internal sac fairly complex, with a large, oblique fold near apex. Right paramere rather narrow, with shortly rounded apex, left paramere rather wide, triangular, considerably larger than right, with shortly rounded apex.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Largely unknown. Holotype collected in Malaise trap during the period from December to February.

Distribution (Fig. 618). Northernmost part of Cape York Peninsula, northeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to occurrence at the tip of the Cape York Peninsula.

Adelotopus convexicollis, spec. nov.

Figs 156, 343, 495, 618

Types. Holotype: ♀, Intake Cairns 14.10.34, M. 170., *Adelotopus apicalis* Macl. dt. B. P. Moore '69, *apicalis* Macl. 1573, J. G. Brooks Bequest 1976 (ANIC).

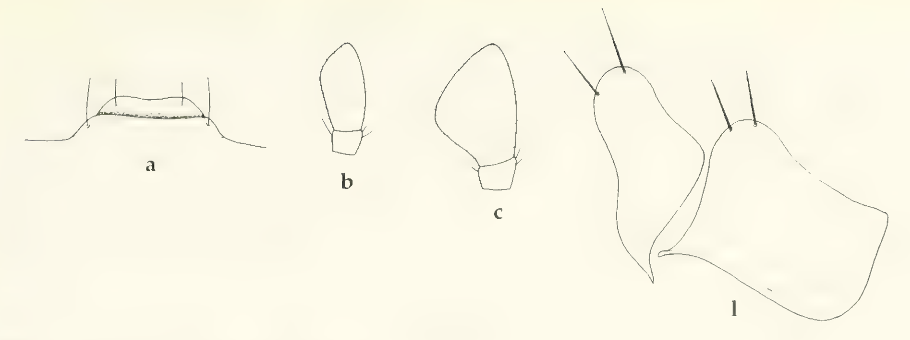
Diagnosis. Rather small, parallel, highly convex, black species with rather wide, fairly well delimited, reddish apex of elytra the anterior border of which is triangular. Further distinguished from related species by laterally but slightly produced head, narrow pronotum with narrow lateral margins and obtusely rounded basal angles, incomplete basal border of elytra, reduced microreticulation, moderately dense puncturation, and wide stylomere with widely rounded apex.

Description

Measurements. Length: 4.85 mm. Ratios. Width/length of pronotum: 1.52; width base/apex of pronotum: 1.48; width pronotum/head: 1.56; length/width of elytra: 1.64; length elytra/pronotum: 2.57.

Colour (Fig. 343). Black, elytra with rather wide, moderately well defined red apex, the anterior border of which is triangular. Lower surface of head and thorax dark piceous, apical half of abdomen reddish. Mouth parts (as far as they are present) dark reddish, legs piceous.

Head (Figs 156a-c). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally feebly projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna broken. Microreticulation very fine, slightly superficial, puncturation extremely fine, rather difficult to detect, fairly sparse. Surface with a shallow sulcus medially of eyes and some fine wrinkles, impilose, rather glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.



Figs 156a-c, l. *Adelotopus convexicollis*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Pronotum (Fig. 343). Rather narrow, highly convex, base rather narrow, narrowed to apex. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, convex in excision, laterally faintly bordered, in middle unbordered. Sides evenly curved throughout, widest near base. Margins very narrow, not explanate, faintly bordered. Basal angles obtusely rounded off. Base almost straight, unbordered. Surface near base without transverse impression. Microreticulation very fine and superficial, puncturation fine, moderately dense, surface impilose, glossy.

Elytra (Figs 343, 495). Rather elongate, convex, margins basally almost parallel, apically evenly narrowed to apex. Apex rather wide, slightly oblique, truncature convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about at the inner third between lateral border and suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 aditional pore behind middle. Setae presumably short. Striae including sutural stria absent. Microreticulation almost absent, only faintest traces visible, puncturation fine, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, slightly setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third obliquely bent and rather deeply hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface moderately punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c.4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 156l). Stylomere rather wide, apex wide, widely rounded off, with 2 elongate subapical setae. Lateral plate rather short, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in October.

Distribution (Fig. 618). Northeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the highly convex prothorax.

Adelotopus gibbosus, spec. nov.

Figs 157, 344, 496, 619

Types. Holotype: ♂, Kuranda, N.Q. 21.3.52 C. Oke (NMV).

Diagnosis. Rather small, moderately wide, markedly convex, rather dull black species with wide reddish apex, the anterior border of which is slightly oblique. Further distinguished from related species by the very convex pronotum with narrow lateral margins and shortly rounded basal angles, incomplete basal border of elytra, distinct microreticulation, very fine puncturation, markedly dull surface, and short and rather wide aedeagus with moderately wide, rounded apex.

Description

Measurements. Length: 4.5 mm. Ratios. Width/length of pronotum: 1.68; width base/apex of pronotum: 1.52; width pronotum/head: 1.57; length/width of elytra: 1.50; length elytra/pronotum: 2.52.

Colour (Fig. 344). Black, margins of pronotum very faintly reddish translucent, elytra with rather wide, well defined red apex, the anterior border of which is slightly oblique. Lower surface of head and thorax piceous-black, of abdomen reddish reddish. Mouth parts, antennae, and legs reddish piceous.

Head (Figs 157a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally slightly projecting, lateral borders but faintly oblique. Clypeal suture semicircular, though very inconspicuous. Labrum rather wide, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae. Terminal palpomere of maxillary palpus slightly widened, not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna rather short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation very fine, though distinct, puncturation barely visible. Surface with a shallow sulcus medially of eyes, impilose, rather dull, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

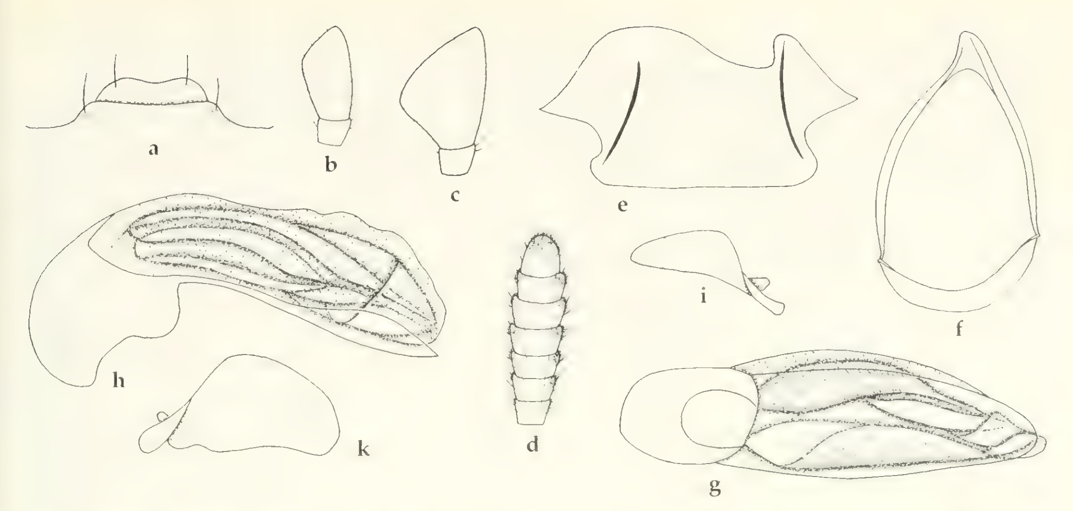
Pronotum (Fig. 344). Moderately wide, markedly convex, base moderately wide, narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, markedly convex in excision, laterally faintly bordered. Sides evenly curved throughout, widest near base. Margins rather narrow, not explanate, faintly bordered. Basal angles rather shortly rounded off. Base feebly concave, unbordered. Surface near base without transverse impression. Microreticulation very fine, though distinct, puncturation fine, fairly dense, surface with some faint irregular wrinkles, impilose, rather dull, slightly silky.

Elytra (Figs 344, 496). Moderately elongate, highly convex, regularly narrowed to apex, faintly convex throughout. Apex fairly wide, rather oblique, truncature slightly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, reaching about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 5 or 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae rather short. Striae including sutural stria absent. Microreticulation fine, distinct, though slightly superficial, puncturation very fine, sparse, surface impilose, fairly dull, slightly silky.

Lower surface. Prosternal process moderately short, rather narrow, straight, apex slightly widened, margin depressed, slightly convex, rather setose. Metepisternum moderately short, c. 1.6 × as long as wide, in posterior third faintly obliquely bent and slightly hollowed. Abdominal sterna with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus distinctly longer than wide, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 157e-k). Genital ring fairly wide, roundish, barely asymmetric, with slightly asymmetric, narrow, barely excised base. Sternum VII rather wide, apically convex, with deep



Figs 157a-k. *Adelotopus gibbosus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

excision, basally almost straight, lateral parts acute and elongate. Aedeagus rather short, convex, in middle widened, almost symmetric. Lower surface gently convex. Apex rather narrow, rounded off. Orifice short, internal sac fairly complex, with a distinct oblique fold near apex. Right paramere triangular, rather narrow, with shortly rounded apex, left paramere considerably larger than right, wide, with widely rounded apex.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype collected in March.

Distribution (Fig. 619). Northeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the convex, gibbose shape.

Adelotopus penelopeae, spec nov.

Figs 158, 345, 497, 655

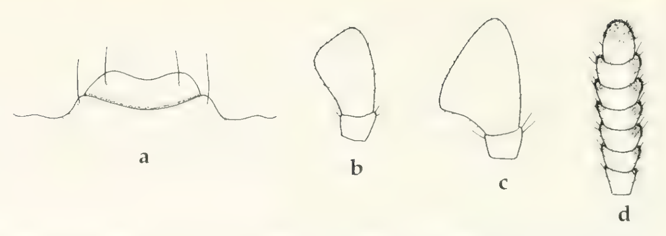
Types. Holotype: ♀ (defect-abdomen absent), Solomon Is. Guadalcanal, Mt. Austen 14/5,1963, P. Greenslade 6020, Solomon Is. Pres. P. J. M. Greenslade B. M. 1966-477 (BMNH).

Diagnosis. Medium-sized, fairly wide, moderately convex, black species with rather wide, fairly well delimited, slightly semilunar reddish apex of elytra. Further distinguished from related species by laterally strongly produced head, rather wide pronotum with moderate lateral margins and obtusely rounded basal angles, incomplete basal border of elytra, almost absent microreticulation, very fine and moderately dense puncturation, and highly glossy surface.

Description

Measurements. Length: 7.35 mm. Ratios. Width/length of pronotum: 1.72; width base/apex of pronotum: 1.61; width pronotum/head: 1.67; length/width of elytra: c. 1.52; length elytra/pronotum: 2.67.

Colour (Fig. 345). Black, margins of pronotum and elytra faintly reddish translucent, elytra with rather wide, slightly semilunar, well defined red apex. Lower surface of head and thorax dark piceous, of abdomen presumably reddish. Mouth parts, antenna, and legs dark reddish.



Figs 158a-d. *Adelotopus penelopeae*, spec. nov. Details of head. For legends see fig. 100.

Head (Figs 158a-d). Very short and wide, moderately depressed. Anterior border almost straight, lateral angle angulately rounded, laterally markedly projecting, lateral borders distinctly oblique-concave. Clypeal suture almost invisible. Labrum rather large, apex faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae. Terminal palpomeres of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation very fine, highly superficial, difficult to detect, puncturation extremely fine, fairly sparse, difficult to detect even under high magnification. Surface with a shallow sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 345). Rather wide, fairly convex, base rather wide, markedly narrowed to apex. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, convex in excision, laterally faintly bordered, in middle unbordered. Sides evenly curved throughout, widest near base. Margins rather narrow, barely explanate, faintly bordered. Basal angles obtusely rounded off. Base almost straight, unbordered. Surface near base without transverse impression. Microreticulation extremely fine and superficial, barely recognizable even under high magnification, puncturation equally extremely fine, rather sparse, surface with some very fine wrinkles, impilose, highly glossy.

Elytra (Figs 345, 497). Rather wide, moderately elongate, fairly convex, margins faintly, but evenly narrowed to apex. Apex rather wide, slightly oblique, truncature strraight, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, little concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae presumably short. Striae including sutural stria absent. Microreticulation almost absent, only faintest traces visible, puncturation extremely fine, difficult to detect, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, square, slightly setose. Metepisternum moderately elongate, c. 1.6 × as long as wide, in posterior third markedly obliquely bent and deeply hollowed. Abdominal sterna unknown. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as wide as long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in May.

Distribution (Fig. 655). Guadalcanal, Solomon Islands. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. Named in honour of the collector of the holotype: Mrs. Penelope Greenslade.

Diagnosis. Medium-sized, moderately convex, dull black species. Whole surface with fine, though distinctmicroreticulation; labrum very narrow, mostly concealed, bisetose; glossa c. 16-setose; lateral margin of pronotum narrow, not explanate, basal angle rounded off; basal border line of elytra incomplete, reaching halfways to suture, ending abruptly; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores and 1 postmedian pore; abdominal sterna without ambulatory setae; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus moderately wide, highly asymmetric, with acute apex, in front of apex deeply sinuate; internal sac of aedeagus complicate, without oblique fold near apex.

Larva. Unknown.

Distribution. A single species in central eastern to northeastern Queensland.

Systematic position. This group is probably the adelphotaxon of the *multipunctatus*-group, but is more apomorphic in the structure of the labrum, the lack of abdominal ambulatory setae, and the unusual structure of the apex of aedeagus. It is perhaps more plesiomorphic in the distinct microreticulation and the absence of an oblique fold in the apex of the internal sac.

Adelotopus obsoletus, spec. nov.

Figs 44, 159, 346, 498, 619

Types. Holotype: ♂, Townsville, Qld, Oct. '02, F. P. Dodd (ANIC). – Paratypes: 1♀, 20 km n. Biggenden, s. Qld. Australia, 22.1.1982, M. Baehr (CBM); 1♀, Australia: Queensland, 32 km N Rockhampton 8.II.1964, J. Sedlacek Collector BISHOP Museum (BMH); 1♂, 2♀♀, Townsville Queensland, G. Bryant Coll. 1919-17, det. *gyrinoides* (BMNH); 2♂♂, 2♀♀, Townsville, Qld 23.10.02 F. P. Dodd, G. Bryant Coll. 1919, det. *gyrinoides* (ANIC, BMNH); 2♂♂, N. of Mareeba Feb. '58, N. Q. Darlingtons (MCZ); 1♂, Australia: n. Qld. 15 km NE of Mareeba 7.I-12.II.1985 Storey & Titmarsh, MDPI Intercept Trap Site No. 25 (DPIM); 1♂, Australia, Qld 93/7, Sand Flat Ck., 35 km s. Palmer River, 23.5.1993, M. Baehr (CBM).

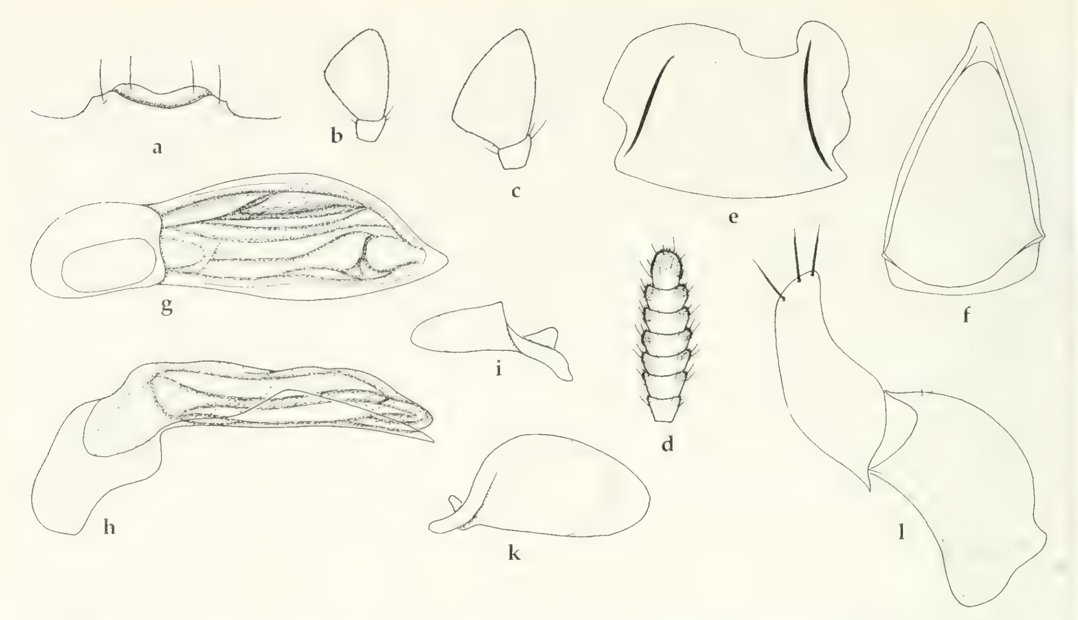
Diagnosis. Rather small to medium-sized, fairly wide, moderately convex, dull black species. Further distinguished from related species by the rather wide pronotum with moderate lateral margins and shortly rounded basal angles, incomplete basal border of elytra, very distinct microreticulation, fine and rather dense puncturation, markedly dull surface, extremely narrow labrum that is deeply covered by the clypeus, and short and wide aedeagus with strongly tapering, acute apex that is conspicuously turned laterally.

Description

Measurements. Length: 4.6-5.6 mm. Ratios. Width/length of pronotum: 1.70-1.75; width base/apex of pronotum: 1.49-1.56; width pronotum/head: 1.55-1.60; length/width of elytra: 1.42-1.51; length elytra/pronotum: 2.43-2.53.

Colour. Piceous-black to black, sometimes margins of pronotum and elytra faintly reddish translucent. Lower surface piceous, posterior borders of abdominal sterna reddish. Mouth parts, antennae, and legs piceous, tibiae and tarsi slightly lighter.

Head (Figs 159a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders but faintly oblique. Clypeal suture semicircular, in middle interrupted. Labrum very narrow, deeply overlapped by the clypeus, rather wide, apex deeply concave. Antennal groove laterally sharply bordered, latero-posteriorly with sharply carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather widened, fairly securiform. Terminal palpomere of labial palpus extremely wide, markedly securiform. Antenna moderately short, 8th-9th antennomeres slightly $<2 \times$ as wide as long. Microreticulation fine, though distinct, puncturation rather fine, fairly dense. Surface with a shallow sulcus medially of eyes, impilose, rather dull, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.



Figs 159a-l. *Adelotopus obsoletus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Pronotum (Fig. 346). Wide, moderately convex, base wide, markedly narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, surpassing posterior margin of eyes. Apex moderately excised, convex in excision, laterally, somtimes also in middle faintly bordered. Sides strongly and evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles rather shortly rounded off. Base laterally feebly concave, in middle slightly convex, faintly bordered. Surface near base without transverse impression. Microreticulation fine, distinct, puncturation fine, fairly dense, surface impilose, dull, slightly silky.

Elytra (Figs 44, 346, 498). Moderately elongate, slightly depressed on disk, regularly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature almost straight, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, reaching about halfways to suture, ending abruptly. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder and 1 additional pore behind middle. Setae rather short. Striae including sutural stria absent. Microreticulation distinct, puncturation rather fine, fairly dense, surface impilose, dull, slightly silky.

Lower surface. Prosternal process moderately short, narrow, straight, apex narrow, straight, forming a sharp angle with the lower surface, rather setose. Metepisternum moderately short, c. 1.6 × as long as wide, in posterior third not obliquely bent nor hollowed. Abdominal sterna without ambulatory setae. Sternum VI without longer setae along apical border. Lower surface rather densely punctate and pilose.

Legs. Rather elongate, 1st tarsomere of protarsus distinctly longer than wide, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur moderately wide. Metatibia elongate, almost 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 159e-k). Genital ring rather narrow, triangular, barely asymmetric, with slightly asymmetric, narrow, barely excised base. Sternum VII rather narrow, apically convex, with deep excision, basally convex, lateral parts short. Aedeagus rather short, depressed, in middle markedly widened, slightly asymmetric. Lower surface almost straight. Apex narrow, acute, turned to left. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres rather wide, with shortly rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 159l). Stylomere narrow and elongate, apex obliquely convex, with 2-3 elongate

subapical setae. Lateral plate elongate, with 1-2 extremely short apical setae.

Variation. Some variation noted in size and in relative shape of pronotum and elytra.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me at light and under bark of river gum, another specimen captured in "intercept trap". So far collected in January, February, May, and October.

Distribution (Fig. 619). From eastern central Queensland to base of Cape York Peninsula.

Material examined (14). Only the type series.

Etymology. The name refers to the dull surface.

villosus-group

Diagnosis. Medium-sized, convex, black species. Whole surface with very coarse puncturation and hirsute, very elongate setae; labrum bisetose; glossa c. 16-setose; lateral margin of pronotum narrow, not explanate, basal angle widely rounded off; basal border line of elytra incomplete, ending halfways to suture; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 7 subhumeral pores and 1 postmedian pore; abdominal sterna with 1 ambulatory seta on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus moderately wide, slightly asymmetric, with rounded apex; internal sac of aedeagus complicate, with oblique fold near apex.

Larva. Unknown.

Distribution. A single species in northeastern Queensland.

Systematic position. This groups is probably the adelphotaxon of the *multipunctatus+obsoletus*-groups, particularly in view of the similar structure of the aedeagus. It is outstanding in the hairy surface, but is more plesiomorphic than both mentioned groups in the larger number and large size of the umbilical pores of the elytra.

Adelotopus villosus, spec. nov.

Figs 45, 160, 347, 499, 620

Types. Holotype: ♂, Mareeba. NQ: 12/50 GB, M. 187., *Adelotopus analis* Macl. det. B. P. Moore '69, *analis* Macl. 1571, J. G. Brooks Bequest, 1976 (ANIC). – Paratypes: 1♀, Australia, Qld 93/43, Sand Flat Ck., 1 km s. Hwy to Cooktown, 5.6.1993, M. Baehr (CBM).

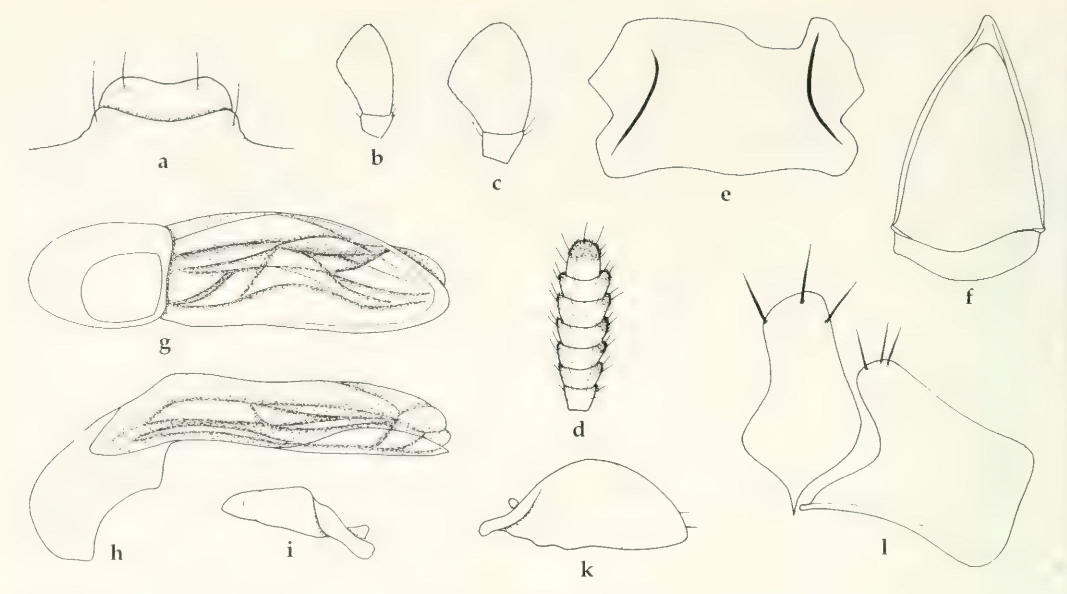
Diagnosis. Medium-sized, rather wide, black species. Distinguished from all other species except for *A. analis* Macleay by the extremely coarse puncturation and the remarkably hirsute surface. Distinguished from *A. analis* by absence of pattern, absence of scutellar pore, basally much wider pronotum, and apically markedly narrowed elytra.

Description

Measurements. Length: 5.65-6.0 mm. Ratios. Width/length of pronotum: 1.94-1.95; width base/apex of pronotum: 1.57-1.58; width pronotum/head: 1.67-1.71; length/width of elytra: 1.43-1.44; length elytra/pronotum: 2.77-2.81.

Colour. Black. Lower surface piceous-black, becoming reddish-piceous towards apex of abdomen. Mouth parts, antennae, and legs piceous.

Head (Figs 160a-d). Short and wide, moderately depressed. Anterior border almost straight, lateral angle shortly rounded, laterally distinctly projecting, lateral borders fairly oblique. Clypeal suture indistinct, semicircular, in middle interrupted. Labrum rather large, moderately wide, apex slightly concave. Antennal groove laterally sharply bordered, latero-posteriorly with sharply carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with



Figs 160a-l. *Adelotopus villosus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres c. 2.25 × as wide as long. Microreticulation absent, puncturation double, a very coarse and rather sparse one, and in the space between the coarse punctures an extremely fine, moderately dense one. Surface with a shallow sulcus medially of eyes, glossy, with elongate, erect hairs arising from the coarse punctures. Ventrolaterally of eyes with a row of rather elongate setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 347). Rather wide, fairly convex, base wide narrow, strongly narrowed to apex. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly bordered. Sides strongly and evenly curved throughout, widest in basal third. Margins rather narrow, not explanate, faintly bordered. Basal angles very widely rounded off. Base faintly convex, distinctly bordered. Surface near base without transverse impression. Microreticulation absent, puncturation double, a very coarse and rather sparse one, and in the space between the coarse punctures an extremely fine, very sparse puncturation, difficult to detect. Surface with some more or less distinct, fine wrinkles, highly glossy, with elongate, erect hairs arising from the coarse punctures. Lateral margin provided with elongate hairs.

Elytra (Figs 45, 347, 499). Moderately elongate, rather convex, though slightly depressed on disk, evenly narrowe from base to apex. Apex rather narrow, slightly oblique, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, behind shoulders and along the whole lateral borders with elongate hairs. Marginal channel extremely narrow, barely concealed. Basal border incomplete, reaching about halfways to suture. Lateral border finely crenulate. Series of umbilical pores apparently consisting of 7 closely set pores behind shoulder and an additional pore behind middle, though difficult to detect within the coarse puncturation. Setae elongate. Striae including sutural stria absent. Microreticulation absent, puncturation very coarse and rather sparse, without finer puncturation in the space between the coarse punctures, surface highly glossy.

Lower surface. Prosternal process rather short, moderately wide, straight, apex moderately wide, convex, very setose. Metepisternum rather short, c. 1.5 × as long as wide, in posterior third obliquely bent and rather hollowed. Abdominal sterna apparently with 1 elongate seta on either side. Sternum VI without longer setae along apical border. Lower surface very coarsely, though rather sparsely punctate, with elongate, erect hairs.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 160e-k). Genital ring rather narrow, triangular, slightly convex, barely asymmetric, with slightly asymmetric, narrow, barely excised base. Sternum VII rather wide, apically almost straight, with fairly deep excision, basally bisinuate excised, lateral parts rather short. Aedeagus short, depressed, in middle slightly widened, barely asymmetric. Lower surface almost straight. Apex wide, widely reounded off. Orifice moderate, internal sac fairly complex, with a distinct oblique fold near apex. Both parameres rather narrow, triangular, with rather narrow, shortly rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 160l). Stylomere wide, apex square, somewhat obliquely rounded, with 1-3 elongate subapical setae. Lateral plate moderately elongate, with 2-3 elongate apical setae.

Variation. Little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. The paratype collected by me under bark of river gum at the border of a dry sandy river. So far captured in December and June.

Distribution (Fig. 620). Base of Cape York Peninsula from Mareeba to about Palmer River, North Queensland.

Material examined (2). Only the holotype and a paratype.

Etymology. The name refers to the conspicuously hairy surface.

similis-group

Diagnosis. Large, convex, black species with red apex. Labrum bisetose; glossa c. 12-setose; lateral margin of pronotum narrow, not explanate, basal angle rounded off; basal border line of elytra incomplete, ending halfways to suture; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 10-14 pores along the whole margin; abdominal sterna with 2-3 ambulatory setae on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus narrow and elongate, symmetric, with narrowly rounded apex; internal sac of aedeagus moderately complicate, with narrow oblique fold near apex.

Larva. 1st instar larva of the single species known.

Distribution. A single species in southeastern Australia, from eastern Victoria to New South Wales, perhaps also in eastern South Australia.

Systematic position. This groups is externally similar to the *multipunctatus*-group, it belongs, however, to another lineage und is presumably the plesiomorphic adelphotaxon of the *tasmani-linearis*-groups.

Adelotopus similis, spec. nov.

Figs 46, 161, 348, 500, 619

Types. Holotype: ♂, 35.30S, 150.18E, Kioloa SF, 15 km NE Batemans Bay, NSW Dec.86, M. G. Robinson, Flight intercept trap (ANIC). – Paratypes: 1♂, 2♀♀, same data (ANIC); 1♂, Adelaide (OUM); 1♀, Australia, Victoria, Melbourne, singled 2-10 II.1977, leg. G. Harsenyi (HNMB); 1♀, Melbourne Coll. Castelnau, *Haemorrhoidalis* Erichs. (Melbourn.) (MCSN); 1♂, 37.34S 145.53E, Cumberland Ck., 13 km ESE of Marysville, 18 Jan.1978. V. Lawrence & Weir, under bark rotten logs (ANIC); 1♂, Macedon, Vic. 26.12.32. C. Oke, *Adelotopus haemorrhoidalis* Er. (NMV); 1♂, E. Eltham, V C. Oke, det. *haemorrhoidalis* (NMV); 1♂, P. Meyer 16.5.66., Woodhouse Cr., Nunniong Plt., under bark of *Eucalyptus* sp. (UASM); 1♂, P. M. 11.5.66, Woodhouse Ck., Nunniong Plt., under bark of *Eucalyptus* sp. (UASM); 1♀, Lyons Villa Victoria J. E. Dixon, *Adelotopus haemorrhoidalis* Er. (NMV); 1♂, 2586 Victoria, *haemorrhoidalis* Erichs (AMNH); 1♀, 2586 Victoria, det. *haemorrhoidalis* (AMNH); 1♂, Victoria,

Ex Museo H. W. Bates 1892 (MNHN); 1♀, *Adelotopus gyrinoides* Hope Victoria (NMV); 1♀, Thredbo R. HJC. 2.26 (ANIC); 1♂, The Creel, Mt. Kosc. 8000 ft. Dec 13'31 NSW, Australia Harvard Exp. Darlington, det. *haemorrhoidalis* (MCZ); 5♂♂, 3♀♀, Australien, NSW 122 Mt. Kosciusko NP, Sawpit Creek, 1400 m, 11.-12.12.1990, M. Baehr (CBM); 1♀, Kosciusko HJC 1-37 (ANIC); 1♀, NSW 20 km S. of Brindabella, 19 Jan.1985, J. F. Lawrence (ANIC); 1♂, Australien, ACT 126, Brindabella Range, 10 km nw. Picadilly Circus, 800 m, 10.12.1987, M. Baehr (CBM); 1♀, Australien, ACT 118, Picadilly Circus, 1200 m, 25 km w. Cotter Dam, 9.12.1990, M. Baehr (CBM); 1♂, 35.22S, 148.48E, Picadilly Circus, 1240 m. ACT Mar'84, J. Lawrence, T. Weir, M. L. Johnson. coll., flight intercept window/trough trap (ANIC); 2♂♂, 1♀, ACT, Brindabella Rge, Picadilly Circus, X-19-82, J. Doyen, *Adelotopus haemorrhoidalis* Er. det. J. Liebherr 1987 (CUIC); 1♀, Wagga, N. S. W., Oct.1936 C. Oke, *Adelotopus haemorrhoidalis* Er., *A. haemorrhoidalis* (NMV); 1♂, N. S. W. Brown Mt. 28.1.1976, J. Sedlacek Collector (CSB); 1♀, Orange NSW T. G. S. 3.07 (ANIC); 1♀, *A. hydrobioides* Westw. Forest Reefs, Lea, *Adelotopus hydrobioides* W, N. S. Wales, *Adelotopus hydrobioides* Westw. Id. by T. G. Sloane (SAMA); 1♂, Australia Blackb's Coll., *Adelotopus* Australia (SAMA); 1♂, 991, 30 Howitt Colln., det. *gyrinoides* (NMV); 1♀, Collection E. Rousseau, I.R.Sc.N.B. I.G. Coll. gen. (IRSNB).

Diagnosis. Rather large, elogate, convex, black species with rather wide reddish apex of elytra. Distinguished from the similar looking *A. haemorrhoidalis* Erichson, *A. minor*, spec. nov., and *A. nitens*, spec. nov. by abbreviated basal border of elytra and larger number of umbilical pores.

Description

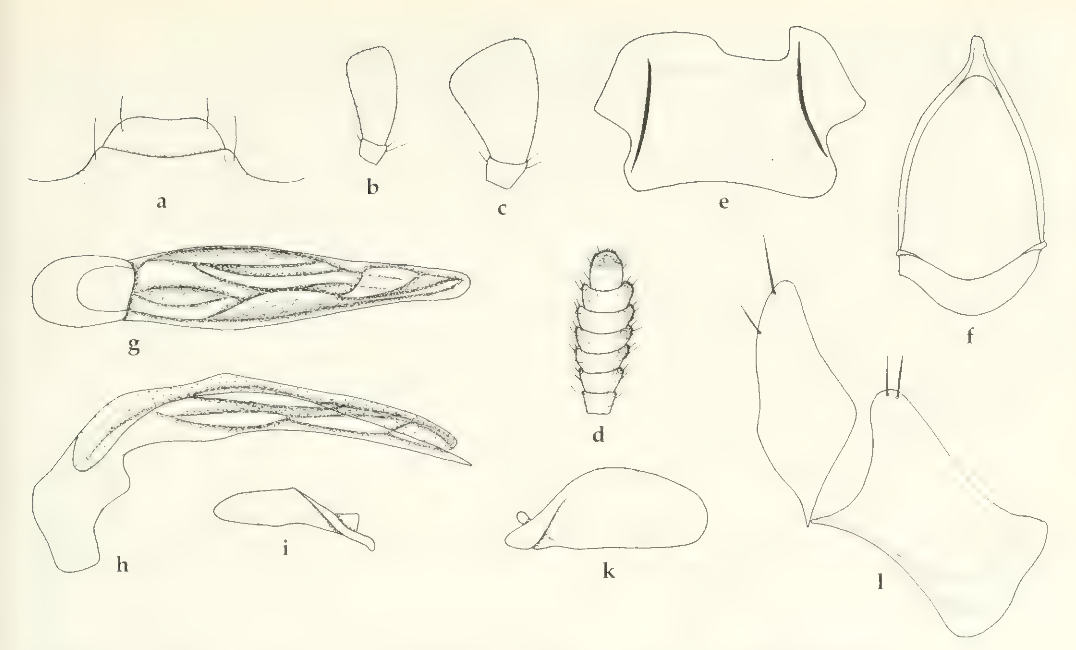
Measurements. Length: 6.9-7.8 mm. Ratios. Width/length of pronotum: 1.51-1.59; width base/apex of pronotum: 1.44-1.50; width pronotum/head: 1.55-1.62; length/width of elytra: 1.67-1.71; length elytra/pronotum: 2.70-2.79.

Colour (Figs 46, 348). Black, commonly margins of pronotum and elytra feebly dark reddish translucent. Elytra with well defined red apex, the anterior border of the spot distinctly concave. Lower surface of head and thorax black to dark piceous, of abdomen light reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 161a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle not or slightly interrupted. Labrum large, apex barely concave. Antennal groove laterally sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, barely widened, not securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation rather fine, distinct, puncturation very fine, rather difficult to see even under high magnification, rather sparse. Surface with a shallow sulcus medially of eyes, sometimes with some faint, irregular strioles, impilose, moderately glossy. Ventro-laterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 348). Moderately wide, convex, base moderately wide, apex narrower. Apical angles moderately produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately deeply excised, slightly convex in excision, unbordered. Sides evenly curved throughout, widest in basal fourth or near base. Margins moderate, not explanate, faintly bordered. Basal angles evenly rounded off. Base almost straight, bordered. Surface near base without transverse impression. Microreticulation very fine, distinct, only slightly superficial, puncturation extremely fine, though slightly more distinct than on head, rather sparse, surface with more or less distinct, faint, irregular strioles, impilose, fairly glossy.

Elytra (Figs 46, 348, 500). Elongate, convex, margins rather parallel in basal ⅗, then gently narrowed. Apex rather wide, transverse, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending about halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 10-14 pores in a rather spaced and somewhat irregular row running down almost the whole length of elytra. Setae moderately elongate. Striae very faintly indicated as rows of extremely fine, irregular, longitudinal strioles. Microreticulation fine, very superficial, sometimes difficlut to detect, though still visible, puncturation fine and rather sparse, becoming more distinct and denser towards apex, surface impilose, rather glossy.



Figs 161a-l. *Adelotopus similis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin slightly convex, rather setose. Metepisternum elongate, >2 × as long as wide or even longer, neither bent nor hollowed. Abdominal sterna with 2-3 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface rather punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ¾, posterior border of groove sharp. Femur wide. Metatibia medium-sized, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 161e-k). Genital ring medium-sized, basally rather parallel, symmetric, arms evenly convex, with rather narrow, little excised base. Sternum VII moderately wide, apically convex, with deep excision, basally regularly excised, lateral parts short. Aedeagus very narrow and elongate, depressed, in middle feebly widened, almost symmetric, apical part very elongate, spatulate. Lower surface gently concave. Apex rather narrow, shortly rounded off. Orifice elongate, internal sac fairly complex, with a small, oblique fold near apex. Right paramere rather narrow, almost parallel, apex attenuate. Left paramere considerably larger than right, elongate, apex obtusely rounded.

♀ genitalia (Fig. 161l). Stylomere rather narrow and elongate, only slightly triangular, with narrow, shortly rounded apex, with 2 subapical setae. Lateral plate elongate, with 2-3 long apical setae.

Variation. Some variation of size, relative shape of pronotum and elytra, and degree of microreticulation and puncturation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Little known. Some specimens collected under bark of "*Eucalyptus* sp.", others in "flight intercept trap", specimens captured by me under bark of different eucalypts, even in dense forest, some in rather high altitude up to about 1400 m. So far collected in October, from December to March, and in May, most specimens, however, in December and January. Occurs sympatrically with *A. haemorrhoidalis* Erichson and *A. minor*, spec. nov., and even syntopically with *A. haemorrhoidalis* (on Picadilly Circus actually on the same tree!).

Distribution (Fig. 619). Eastern Victoria, Australian Capital Territory, New South Wales, ? South Australia. The latter unique record is doubtful, the more, as it is an old specimen from the Hope Collection that bears only the label "Adelaide".

Material examined (42). Only the type series.

Etymology. The name refers to the strong external similarity with the related species *A. haemorrhoidalis* Erichson.

tasmani-group

Diagnosis. Medium-sized, elongate, highly convex, black species with red apex of elytra. Labrum bisetose; glossa c. 12-setose; lateral margin of pronotum narrow, not explanate, basal angle shortly rounded off; basal border line of elytra incomplete, reaching to median third of base; scutellar pore absent; lateral margin of elytra very narrow, without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores only; abdominal sterna with many ambulatory setae on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus so far unknown.

Larva. Unknown.

Distribution. A single species from Tasmania.

Systematic position. The relations of this groups are rather uncertain. Perhaps it belongs to the lineage that combines the *similis-linearis*-groups and is probably the adelphotaxon of the *nigricauda-linearis*-lineage. It is more apomorphic than the *similis*-group in the lesser number of umbilical pores of the elytra and in the narrow, cylindrical shape.

Adelotopus tasmani Blackburn, 1901

Figs 47, 162, 349, 501, 619

Adelotopus tasmani Blackburn, 1901, p. 18; Seidlitz 1903, p. 132 (*tasmaniae*); Sloane 1920, p. 177; Notman 1925, p. 6, 29; Csiki 1933, p. 1636 (*tasmaniae*); Moore et al. 1987, p. 53.

Types. Lectotype (by present designation): ♀, Type, 1491 T. Tasm. Lakes, Blackburn Coll. 1910-236, *Adelotopus Tasmani*, Blackb. (BMNH).

Type locality: "Tasm. Lakes", central Tasmania.

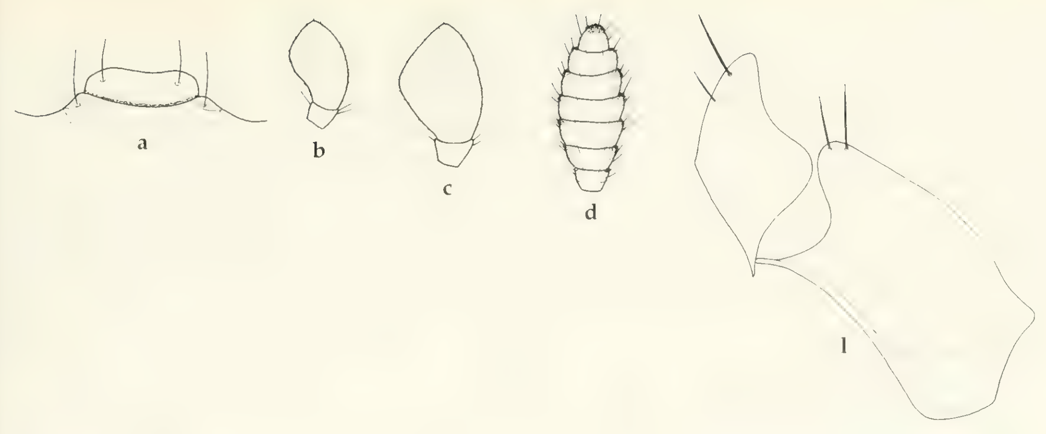
Diagnosis. Medium-sized, narrow, elongate, convex, black species with fairly wide reddish apex of elytra. Distinguished from similar looking species by the rather elongate basal border of elytra, rather large number of umbilical pores, and large number of ambulatory setae of the abdomen.

Description

Measurements. Length: 5.8 mm. Ratios. Width/length of pronotum: 1.30; width base/apex of pronotum: 1.25; width pronotum/head: 1.36; length/width of elytra: c. 1.83; length elytra/pronotum: 2.56.

Colour (Figs 47, 349). Blackish, all margins of pronotum and lateral margin of elytra faintly reddish translucent, apical fourth of elytra reddish, border of reddish spot prolonged along margins. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 162a-d). Moderately short, rather wide, fairly convex. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture distinct, semicircular. Labrum rather large and wide, apex slightly concave. Antennal groove laterally sharply bordered, latero-posteriorly with convex area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus narrow, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna very short, 8th-9th antennomeres almost 3 × as wide as long. Microreticulation dense and distinct, puncturation not visible. Surface with shallow sulcus medially of eyes, impilose, dull, somewhat silky. Ventrolaterally of eyes with a row of very short and inconspicuous setae. Suborbital field impunctate. Gula impilose.



Figs 162a-d, l. *Adelotopus tasmani* Blackburn. Details of head and ♀ genitalia. For legends see fig. 100.

Pronotum (Fig. 349). Rather narrow, convex, not much wider than long, base slightly wider than apex. Apical angles barely produced, at apex rounded, rather oblique, barely attaining posterior border of eyes. Apex feebly excised, slightly convex in excision, faintly and irregularly bordered. Sides slightly oblique, almost straight, widest near base. Margins narrow, faintly chanelled, finely bordered. Basal angles moderately widely rounded off. Base faintly convex, distinctly bordered. Surface near base without transverse impression. Microreticulation dense and distinct, puncturation not visible, surface with some very fine, irregular wrinkles, impilose, dull, slioghtly silky.

Elytra (Figs 47, 349, 501). Narrow and elongate, cylindrical, almost parallel, though on disk slightly depressed. Apex wide, transverse, faintly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow throughout, mostly concealed. Basal border incomplete, reaching to median third of base. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder. Setae fairly short. Striae including sutural stria absent. Microreticulation dense and distinct, puncturation not visible, surface impilose, rather dull.

Lower surface. Prosternal process rather elongate, moderately wide, slightly convex, apex wide, gently convex, passing over in an almost right angle from ventral surface, setose. Metepisternum elongate, c. 2.2 × as long as wide, in posterior third not hollowed. Abdominal sterna with a row of several elongate setae along base of each. Sternum VI without longer setae along apical border. Lower surface sparsely punctate and pilose. Prosternum with some deep, rugose, transverse sulci.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 162l). Stylomere wide, though apex acute, triangular, obliquely rounded, lateral border concave, with 1 elongate seta at apex and 1 sorter subapical seta. Lateral plate elongate, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown.

Distribution (Fig. 619). Central Tasmania.

Material examined (1). Only the lectotype.

Diagnosis. Medium-sized, elongate, though dorsally depressed, black species with basal ⅗ of elytra red. Labrum bisetose; glossa c. 12-setose; lateral margin of pronotum fairly wide, somewhat channeled, but not explanate, basal angle shortly rounded off; basal border line of elytra incomplete, reaching halfways to suture; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores only; abdominal sterna with many 1 ambulatory seta on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus rather short and wide, slightly asymmetric, with acute apex; internal sac of aedeagus rather complicate, with distinctly denticulate area, but without oblique fold near apex.

Larva. Unknown.

Distribution. A single species from northern Cape York Peninsula, northeastern Queensland.

Systematic position. The relations of this groups are rather uncertain. Probably it belongs to the *similis-linearis*-lineage and is perhaps the adelphotaxon of the *seriepunctatus-linearis*-groups. It is apomorphic in the narrow, dorsally depressed shape, the unusual elytral and abdominal pattern, the low number of umbilical pores of the elytra, the absence of the microreticuation on the elytra, the acute apex of the aedeagus, and the presence of distinct denticulation at the apex of the internal sac. It is perhaps plesiomorphic in the absence of a distinct oblique fold at the apex of the aedeagus.

Adelotopus nigricauda, spec. nov.

Figs 48, 163, 350, 620

Types. Holotype: ♂, 12.43S 142.42E QLD 7 km S of Batavia Downs 19 Jun-22 Jul 1992 Flight Intercept Trap P. Zborowski & E. S. Nielsen (QMB T26062).

Diagnosis. Medium sized, elongate, fairly parallel, rather convex, black species with basal ⅗ of elytra, meso- and metathorax, and base of abdomen red. Further distinguished from similarly coloured species by absence of any black colour at the base of elytra except for the black scutellum, black rather than red apex of abdomen, narrow shape, narrow, almost parallel pronotum with base little wider than apex, and short and wide, at apex rather shortly rounded aedeagus.

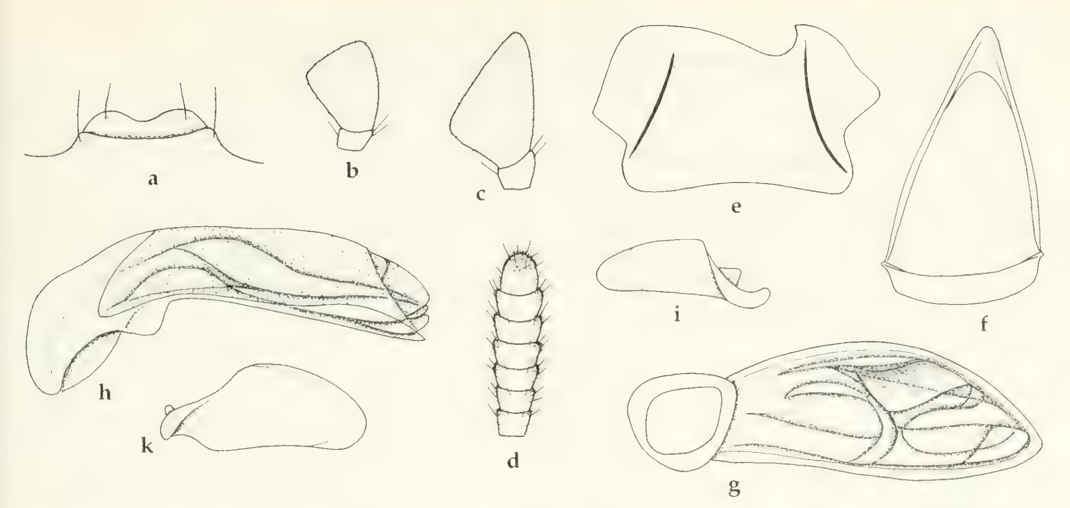
Description

Measurements. Length: c. 4.85 mm. Ratios. Width/length of pronotum: 1.42; width base/apex of pronotum: 1.22; width pronotum/head: 1.35; length/width of elytra: 1.79; length elytra/pronotum: 2.58.

Colour (Figs 48, 350). Black, lateral margin of pronotum narrowly reddish translucent. Basal ⅗ of elytra light reddish, apex contrastingly black. Lower surface of head and prothorax black, meso- and metathorax and base of abdomen red, 5 apical sternites of abdomen contrastingly black. Mouth parts, antenna, and legs red.

Head (Figs 163a-d). Short and moderately wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally barely projecting, lateral borders oblique. Clypeal suture barely visible. Labrum rather wide, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with weak carina. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically widely rounded, ventrally with indistinct keel, at border with c. 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, slightly securiform. Terminal palpomere of labial palpus very wide, >2 × as wide as long, markedly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation very fine, distinct, puncturation extremely fine, moderately dense, surface with a shallow sulcus medially of eyes, impilose, moderately glossy, somewhat silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather sparsely setose, gula asetose.

Pronotum (Fig. 350). Moderately wide, fairly convex, almost parellel, base not much wider than apex. Apical angles moderately produced, moderately acute, obtuse at apex, slightly oblique, surpass-



Figs 163a-k. *Adelotopus nigricauda*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

ing posterior border of eyes. Apex moderately excised, slightly convex in excision, laterally distinctly, in middle faintly bordered. Sides faintly curved throughout, widest about in middle. Margins rather explanate, anteriorly faintly bordered. Basal angles rounded off. Base almost straight, faintly bordered. Surface near base with very faint transverse impression. Microreticulation extremely superficial, almost absent, puncturation very fine, rather sparse, surface impilose, glossy.

Elytra (Figs 38, 350). Elongate, convex, almost parallel. Apex rather wide, slightly oblique, truncature almost straight, apical angles rounded off. Shoulders obtusely rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, inner part concealed. Basal border incomplete, absent in median half, ending gradually. Scutellar pore absent. Lateral border asetose. Series of umbilical pores consisting of 6 pores behind shoulder. Setae short. Striae including sutural stria absent. Microreticulation absent, puncturation extremely fine, rather sparse, surface structure difficult to detect because of weakness of elytra. Surface impilose, glossy.

Lower surface. Prosternal process moderately elongate, fairly wide, straight, apex moderately elongate, narrow , straight, shortly setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, almost not bent and hollowed in posterior third. Abdominal sterna with 1 elongate setae on either side. Sternum VI without elongate setae at apical border. Lower surface moderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur very deep, anterior plate widely overlapping the groove for at least apical half, posterior border of groove sharp. Femur rather wide. Metatibia rather elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 2 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 163e-k). Genital ring rather narrow, markedly triangular, feebly asymmetric, arms almost straight, with rather narrow, asymmetric base, with elongate apex. Sternum VII rather wide, apically almost straight, with fairly deep excision, basally gently concave, lateral parts moderately elongate. Aedeagus short, wide, rather depressed, in middle strongly widened, slightly asymmetric. Lower surface slightly convex. Apex rather narrow, obtusely rounded. Orifice rather short, internal sac fairly complex, with a distinctly denticulate area, but no oblique fold at apex. Both parameres large and elongate, right almost as long as left, apex obtusely rounded.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Largely unknown. Holotype collected in "flight intercept trap". So far captured in the period of June-July.

Distribution (Fig. 620). Northern part of Cape York Peninsula, north Queensland.

Material examined (1). Only the holotype.

Etymology. The name refers to the contrastingly black apex of elytra and abdomen.

seriepunctatus-group

Diagnosis. Medium-sized, rather narrow and elongate, almost cylindrical, glossy black species with reddish apex of elytra. Labrum bisetose; glossa c. 12-setose; lateral margin of pronotum very narrow, basal angle almost rectangular; basal border line of elytra abbreviated, attaining less than half of base; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 6-8 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather short and wide, with rounded or acute apex; internal sac of aedeagus complicate, without oblique fold at apex.

Larvae. 1st instar larvae known of one species only.

Distribution. 5 species and additional 2 subspecies from South Australia through Victoria, NSW including the southwestern part to northeastern Queensland, and southwestern Australia.

Systematic position. This group is perhaps rather plesiomorphic in the low number of glossal setae and the large number of marginal elytral pores. It is highly apomorphic, however, in the narrow, cylindrical shape, presence of pattern, absence of microreticulation and very glossy surface, abbreviated basal border of elytra, low number of abdominal ambulatory setae, and the complicate structure of the internal sac of the aedeagus. Probably it is the in severeal respects highly apomorphic adelphotaxon of the *rubiginosus-laevis*-groups.

Adelotopus seriepunctatus Notman, 1925

This species occurs in two subspecies, a southern one in Victoria, and a northern one in Queensland, though there are so far no records available from the area between, namely New South Wales.

The examined material of this species includes a syntype of *A. analis* Macleay which, however, is a completely different species. A specimen from the Chaudoir Collection is labelled *lioderma* Chaudoir which is perhaps a manuscript name that, at least from my knowledge, has been never published.

Diagnosis. Medium-sized to fairly large, elongate, convex, black species with reddish apex. Distinguished from related species by the glossy surface, rather conical, only fairly punctate pronotum, narrow, though coarsely bordered lateral margin of pronotum, uniseriate puncturation on the elytral intervals with each puncture bearing an elongate seta, and the wide, medially very convex, laterally concave stylomere.

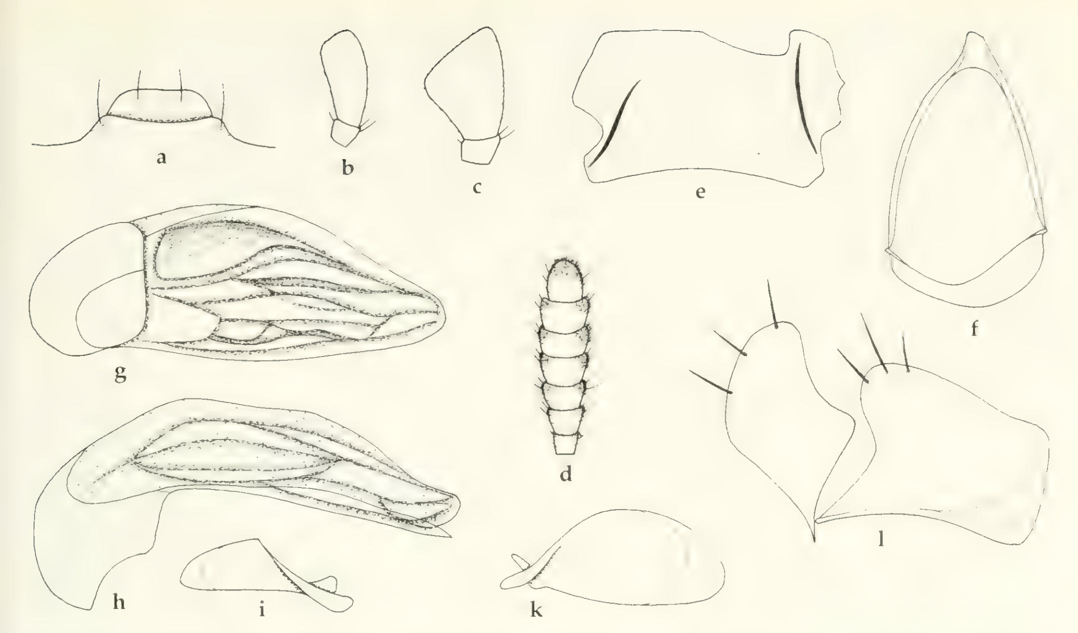
Adelotopus seriepunctatus seriepunctatus Notman, 1925
Figs 164, 351, 502, 620

Adelotopus seriepunctatus Notman, 1925, p. 8, 9, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

Types. Holotype: ♀, 2590 Victoria, Type, *Adelotopus seriepunctatus* Ntm. det. Ntm (AMNH).

Type locality: "Victoria".

Diagnosis. Large subspecies, distinguished from *A. seriepunctatus striatus*, subspec. nov. by larger size, rather distinctly conical pronotum with less convex lateral margins, less dense puncturation on apical half of pronotum, and absence of punctures along the elytral striae.



Figs 164a-l. *Adelotopus seriepunctatus seriepunctatus* Notman. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 6.0-6.7 mm. Ratios. Width/length of pronotum: 1.33-1.44; width base/apex of pronotum: 1.43-1.51; width pronotum/head: 1.51-1.59; length/width of elytra: 1.58-1.64; length elytra/pronotum: 2.29-2.34.

Colour (Fig. 351). Glossy black, apical fourth or fifth of elytra reddish with fairly ill defined border. Lower surface of head and thorax blackish, abdomen reddish-piceous or reddish, slightly lighter towards apex. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi not darker.

Head (Figs 164a-d). Moderately short, rather wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus moderately wide, barely securiform. Antenna narrow and rather elongate, parallel, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation absent, puncturation very fine, moderately dense. Surface with weak sulcus medially of eyes, impilose, very glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 351). Large, though rather narrow, highly convex, not much wider than long, rather conical, base distinctly wider than apex. Apical angles fairly produced, at apex rather acute, fairly oblique, attaining posterior third of eyes. Apex fairly excised, slightly convex in excision, distinctly bordered. Sides slightly convex, markedly oblique. Margins narrow, barely chanelled, coarsely bordered. Basal angles rectangular, very shortly rounded off. Base faintly convex, coarsely bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation in basal half and in middle of apical part very sparse, rather fine, in lateral part of apical half coarse and fairly dense, though to a rather different degree, surface with scattered, rather elongate hairs, highly glossy.

Elytra (Figs 351, 502). Rather narrow and elongate, convex, parallel, sometimes even faintly widened in apical third. Apex very wide, transverse, truncature convex, in middle distinctly drawn in,

apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel anteriorly narrow, becoming extremely narrow apically, partly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 7-8 rather spaced pores behind shoulder, but pores difficult to tell from puncturation of disk, especially posteriorly. Setae fairly elongate. Scutellum very wide. Striae including sutural stria absent, not marked by rows of fine punctures. Microreticulation absent, each interval with a spaced row of slightly rasp-like or umbilicous punctures, each of which bears a fairly elongate, erect hair, surface markedly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, convex, apex wide, convex, passing over in an almost right angle from ventral surface, rather setose. Metepisternum very elongate, c. 2.2-2.3 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface sparsely punctate and rather elongately setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 164e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather small, fairly excised base. Sternum VII rather wide, apically almost straight, with moderately deep excision, base excised, basal angles obtuse, lateral parts fairly short. Aedeagus rather short, moderately depressed, in middle markedly widened, evenly narrowed to apex, faintly asymmetric. Basal part fairly short, rather bent. Lower surface almost straight. Apex moderately wide, evenly rounded. Orifice rather elongate, internal sac moderately complex, apparently without a distinct oblique fold near apex. Both parameres rather elongate, slightly triangular, though convex, with moderately rounded apex, left paramere considerably larger than right.

♀ genitalia (Figs 164l). Stylomere wide, median border markedly convex, lateral border concave, with 3-5 elongate setae at apex. Lateral plate rather elongate, with 2-3 elongate apical setae.

Variation. Only some variation noted in shape of pronotum which may be more or less conical, and in density of the coarse punctures on the lateral parts of the apical half of the pronotum.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Dated specimens captured in January and August.

Distribution (Fig. 620). Victoria, southern New South Wales.

Material examined (7). **Vic:** 1♀, Melbourne, *inquinatus* Newm. (BMNH); 1♀, Killara, C. Oke, *Adelotopus seriepunctatus* Notm. (NMV); 1♀, Launching Place, 1.I.08, C. Oke, *Adelotopus seriepunctatus* Notm. (NMV); 1♀, Greendale, 12.VIII.(?)56, A. N. (CBM); 1♀, 2590, Type, *Adelotopus seriepunctatus* Ntm. det. Ntm, holotype! (AMNH). – **NSW:** 1♂, 1♀, Jenolan, 21.VIII.33, O. H. Swezey Collector (BMH).

Adelotopus seriepunctatus striatus, subspec. nov.

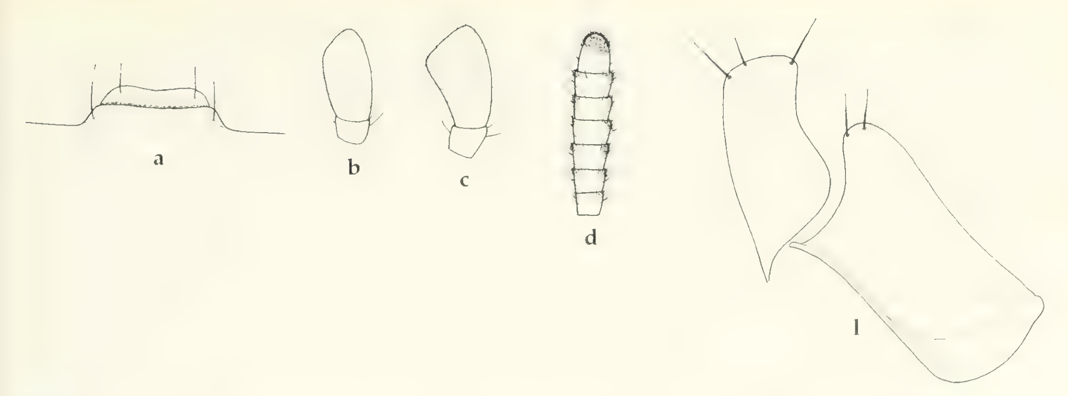
Figs 49, 352, 503, 620

Types. Holotype: ♂, Townsville, Qld, 23.X.02, F. P. Dodd, 21 (ANIC). – Paratypes: 1♀, Gayndah, Syntype, *Adelotopus analis* Macl. Gayndah (ANIC-MMS); 1♀, Maryborough Queensland E. W. Fischer (SAMA); 1♀, Rockhampton, N. Australia (Darnelly) Higgins 1864 (OUM); 1♂, Qld 29, 215 km n. Dingo, Fitzroy Dev. Road, 12.XI.1990, M. Baehr (CBM); 1♂, 1♀, N. Holl. Q'land, Janson Acq. 1884 (MNHN); 1♀, Queensl (OUM); 1♀, Australie sept. Schmeltz, Ex Musaeo Chaudoir, det. *lioderma* Chaud. (MNHN); 1♂, Nov. Holl. (NHRS).

Diagnosis. Smaller subspecies, distinguished from *A. s. seriepunctatus* Notman by lesser size, not distinctly conical pronotum with convex lateral margins, denser puncturation on apical half of pronotum, and presence of punctures along the elytral striae.

Description

Measurements. Length: 4.95-6.1 mm. Ratios. Width/length of pronotum: 1.33-1.43; width base/apex of pronotum: 1.42-1.51; width pronotum/head: 1.50-1.58; length/width of elytra: 1.59-1.63; length elytra/pronotum: 2.22-2.32.



Figs 165a-d, l. *Adelotopus convexus,* spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Colour (Figs 49, 352). Similar to nominate subspecies.

Head. Similar to nominate subspecies.

Pronotum (Fig. 352). Rather similar to nominate subspecies, though less conical and with more distinctly convex lateral margins, and basal angles more widely rounded off. Puncturation even in in basal half and in middle of apical half denser and coarser than in nominate subspecies, usually also middle of apical half distinctly and rather coarsely punctate. In lateral part of apical half puncturation also denser.

Elytra (Figs 49, 352, 503). Rather similar to nominate subspecies, though striae indicated by rows of fine punctures.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia. Rather similar to nominate subspecies. In the few examined males aedeagus slightly longer and narrower.

♀ genitalia. Rather similar to nominate subspecies. Stylomere with 2-4 elongate setae at apex.

Variation. Some variation noted in shape of pronotum, density of pronotal puncturation, and distinctness of puncturation of elytral striae.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of a bloodwood-like eucalypt, together with several other pseudomorphine species. Dated specimens captured in October and November.

Distribution (Fig. 620). Central eastern Queensland north to Townsville.

Material examined (10). Only the type series.

Etymology. The name refers to the distinct traces of elytral striation.

Adelotopus convexus, spec. nov.

Figs 165, 353, 504, 620

Types. Holotype: ♀, Lawes, 15.12.54, PQ ASA9 (QMB T26067).

Diagnosis. Medium-sized, elongate, very convex, black species with reddish apex. Distinguished from related species by the glossy surface, laterally rather convex, only fairly punctate pronotum, very narrow lateral margin of pronotum, uniseriate puncturation on the elytral intervals with each puncture bearing an elongate seta, absence of punctures along the elytral striae, the moderately narrow, parallel, apically almost transverse stylomere, and the elongate lateral plate. Also distinguished from the most closely related species *A. seriepunctatus* Notman by narrower pronotum and longer elytra.

Description

Measurements. Length: c. 5.65 mm. Ratios. Width/length of pronotum: 1.37; width base/apex of pronotum: 1.41; width pronotum/head: 1.46; length/width of elytra: 1.69; length elytra/pronotum: 2.40.

Colour (Fig. 353). Glossy black, apical third of elytra reddish with fairly ill defined and very serrate border. Lower surface of head and thorax blackish, abdomen reddish, slightly lighter towards apex. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi not darker.

Head (Figs 165a-d). Moderately short, rather wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus moderately wide, barely securiform. Antenna narrow and rather elongate, parallel, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation absent, puncturation extremely fine, sparse. Surface with weak sulcus medially of eyes, impilose, very glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 353). Large, though narrow, highly convex, barely wider than long, base not much wider than apex. Apical angles fairly produced, at apex rather acute, fairly oblique, attaining posterior third of eyes. Apex fairly excised, slightly convex in excision, unbordered. Sides fairly convex, slightly oblique. Margins very narrow, not chanelled, rather faintly bordered. Basal angles rectangular, very shortly rounded off. Base faintly concave, coarsely bordered. Surface near base without transverse impression. Microreticulation absent, puncturation in basal half and in middle of apical half fairly sparse, moderately fine, in lateral part of apical half coarse and rather dense, surface with scattered, rather elongate hairs, highly glossy.

Elytra (Figs 353, 504). Narrow and elongate, highly convex, basally parallel, in apical third evenly narrowed. Apex rather narrow, transverse, truncature convex, in middle distinctly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel very narrow except for basal sixth, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 6-7 rather spaced pores behind shoulder, but pores difficult to tell from puncturation of disk, especially posteriorly. Setae fairly elongate. Scutellum very wide. Striae including sutural stria absent, not marked by rows of fine punctures. Microreticulation absent, each interval with a spaced row of slightly rasp-like or umbilicous punctures, each of which bears a fairly elongate, erect hair, surface markedly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, convex, apex wide, convex, passing over in an almost right angle from ventral surface, rather setose. Metepisternum very elongate, c. 2.4 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface sparsely punctate and rather elongately setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

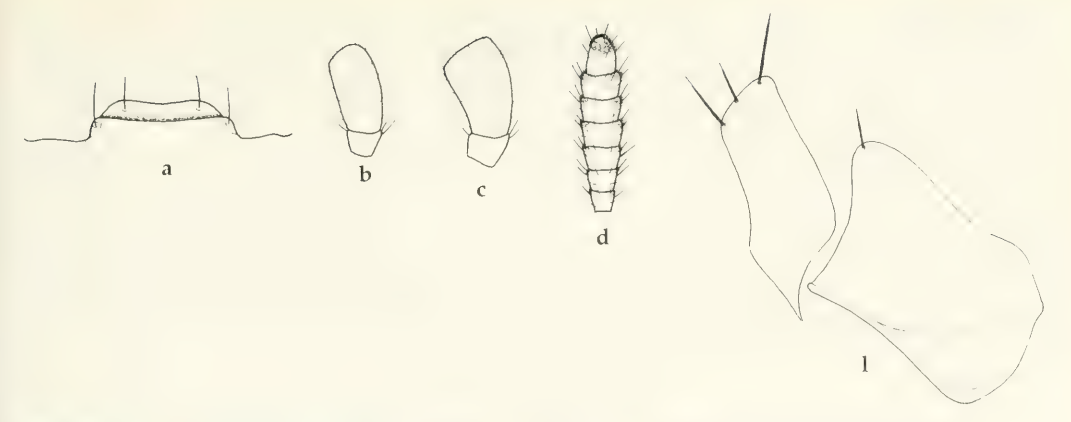
♀ genitalia (Fig. 165l). Stylomere rather wide, fairly prallel, median border straight, lateral border slightly concave, apex slightly widened, almost transverse, with 3 elongate setae. Lateral plate very elongate, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype collected in December.

Distribution (Fig. 620). Southeastern Queensland. Known only from type locality.



Figs 166a-d, l. *Adelotopus calvus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

Material examined (1). Only the holotype.

Etymology. The name refers to the convex shape of prothorax and elytra.

Adelotopus calvus, spec. nov.
Figs 166, 354, 505, 621

Types. Holotype: ♀, 1 ml East Bakerville Q 13-XI-1974 J. D. Brown, *Adelotopus* sp. det. B. P. Moore '80 (QMB T26057).

Diagnosis. Medium-sized, rather elongate, convex, black species with reddish apex. Distinguished from related species by the glossy surface, laterally rather convex, only fairly punctate pronotum, fairly wide lateral margin of pronotum, impunctate and impilose elytral intervals, punctate elytral striae, and the narrow, parallel, stylomere.

Description

Measurements. Length: 5.3 mm. Ratios. Width/length of pronotum: 1.40; width base/apex of pronotum: 1.39; width pronotum/head: 1.51; length/width of elytra: c. 1.55; length elytra/pronotum: 2.21.

Colour (Fig. 354). Glossy black, lateral margins of pronotum and elytra reddish translucent, apical third of elytra reddish with fairly ill defined border. Lower surface of head and thorax reddish-piceous, abdomen reddish, slightly lighter towards apex. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 166a-d). Moderately short, rather wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture very inconspicuous, semicircular. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna narrow and rather elongate, parallel, 8th-9th antennomeres <1.5 × as wide as long. Microreticulation absent, puncturation extremely fine, sparse. Surface with weak sulcus medially of eyes, impilose, very glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 354). Large, fairly wide, convex, distinctly wider than long, base not much wider than apex. Apical angles fairly produced, at apex rather acute, fairly oblique, almost attaining posterior third of eyes. Apex fairly excised, convex in excision, almost unbordered. Sides fairly convex, barely

oblique. Margins moderately narrow, narrowly chanelled, coarsely bordered. Basal angles rather shortly rounded off. Base straight, irregularly bordered. Surface near base without transverse impression. Microreticulation absent, puncturation in basal half and in middle of apical half extremely fine and superficial, visible only at very high magnification, sparse, in lateral part of apical half very coarse and rather dense, surface impilose, highly glossy.

Elytra (Figs 354, 505). Rarether narrow and elongate, convex, though slightly depressed on disk, rather parallel. Apex fairly wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel fairly narrow throughout, partly concealed. Basal border incomplete, attaining almost mid of base. Lateral border asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder, pores difficult to see. Setae fairly elongate. Scutellum very wide. Inner 6 striae including sutural stria marked by rows of fine punctures, outer striae absent. Microreticulation absent, intervals impunctate, surface impilose, markedly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, convex, apex wide, convex, passing over in an acute angle from ventral surface, rather setose. Metepisternum very elongate, c. 2.2 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface sparsely punctate and rather elongately setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 166l). Stylomere rather narrow, parallel, both median and lateral borders straight, apex oblique, with 3 elongate setae. Lateral plate rather short, with 1 elongate apical seta.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Largely Unknown. Holotype collected "under bark Bloodwood" in November.

Distribution (Fig. 621). Atherton Tableland, Northeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the absence of punctures and hairs in the intervals.

Adelotopus montisatri, spec. nov.

Figs 167, 355, 506, 621

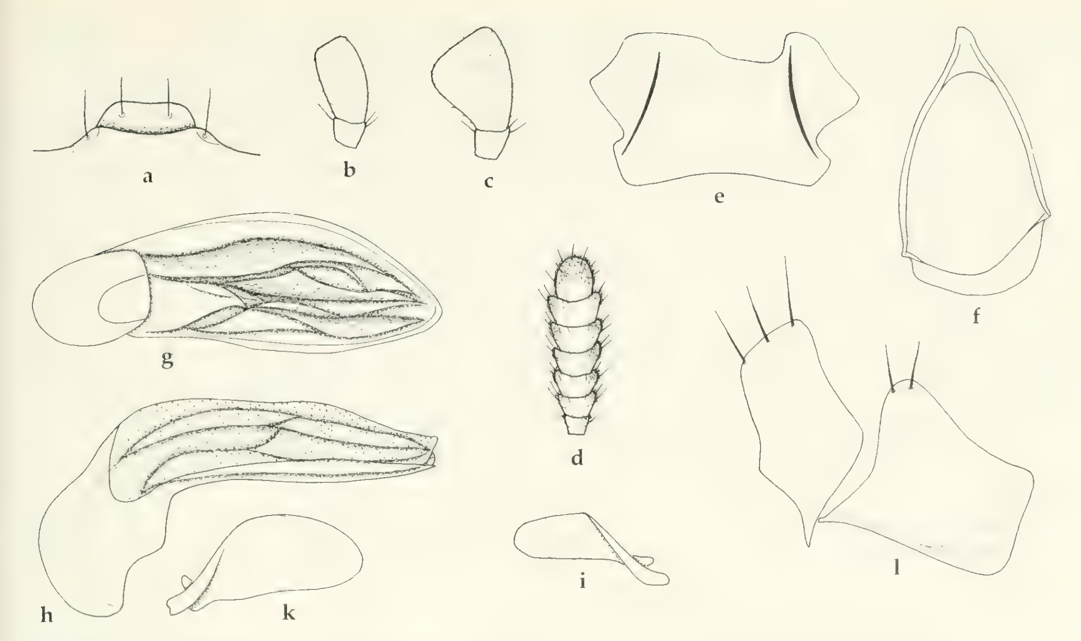
Types. Holotype: ♂, N. Slope, Black Mtn. ACT, 4 Sept 1971, K. R. Pullen, Kim Pullen Coll. (ANIC). – Paratypes: 1♂, Bombala (MMS); 1♀, Australia: Black Mountain A. C. T. 13.XI.60, B. P. Moore (CMC); 1♀, Weston, A. C. T., 8.IV.1969, E. Britton (ANIC); 1♀, Australien, ACT 119, Tidbinbilla Rge, 750 m, 6 km w. Cotter Dam, 9.12.1990, M. Baehr (CBM).

Diagnosis. Rather small to medium-sized, elongate, convex, black species with reddish apex. Distinguished from related species by the glossy surface, narrow and elongate, coarsely and rather regularly punctate pronotum, sparsely uniseriately punctate and setose elytral intervals, punctate elytral striae, and the wide, at apex obliquely transverse, rather parallel stylomere.

Description

Measurements. Length: 4.25-5.0 mm. Ratios. Width/length of pronotum: 1.13-1.19; width base/apex of pronotum: 1.25-1.32; width pronotum/head: 1.26-1.33; length/width of elytra: 1.85-1.90; length elytra/pronotum: 2.32-2.40.

Colour (Fig. 355). Black, apical fourth of elytra reddish with fairly ill defined border. Lower surface of head and thorax blackish, abdomen reddish, slightly lighter towards apex. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.



Figs 167a-l. *Adelotopus montisatri*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Head (Figs 167a-d). Rather short, moderately wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary elongate, not securiform. Terminal palpomere of labial palpus moderately wide, barely securiform. Antenna rather narrow and moderately elongate, fairly parallel, 8th-9th antennomeres c. 1.75 × as wide as long. Microreticulation absent, puncturation moderately fine, moderately dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 355). Rather narrow, elongate, highly convex, barely wider than long, rather parallel, base barely wider than apex. Apical angles moderately produced, at apex rather acute, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, slightly convex in excision, faintly bordered. Sides barely convex, faintly oblique. Margins very narrow, barely chanelled, coarsely bordered. Basal angles rectangular, very shortly rounded off. Base faintly convex, coarsely bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, punctuation in basal half rather dense, coarse, though becoming much finer towards base, also somewhat finer in middle, surface apparently impilose, highly glossy.

Elytra (Figs 355, 506). Narrow and elongate, convex, rather parallel. Lateral borders faintly convex. Apex wide, slightly oblique, truncature convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel very narrow throughout, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 6, rarely 7 rather spaced pores behind shoulder, but pores small and difficult to detect. Setae fairly elongate. Scutellum very wide. Inner 6 striae including sutural stria marked by rows of moderately fine to fairly coarse punctures, outer striae absent. Microreticulation absent, each interval with a irregular, very spaced row of fine, not rasp-like punctures, each of which bears a rather short, erect hair, surface markedly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, convex, apex wide, convex,

passing over in a slightly acute angle from ventral surface, rather setose. Metepisternum very elongate, c. 2.4 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface sparsely punctate and rather elongately setose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, slightly >5 × as long as wide, 1st tarsomere of metatarsus almost 2 × as long as wide.

♂ genitalia (Figs 167e-k). Genital ring moderately wide, rather convex, barely asymmetric, with slightly asymmetric, rather small, fairly excised base. Sternum VII rather wide, apically almost straight, with moderately deep excision, base excised, basal angles obtuse, lateral parts fairly short. Aedeagus rather short, moderately depressed, in middle markedly widened, evenly narrowed to apex, faintly asymmetric. Basal part fairly short, rather bent. Lower surface almost straight to gently convex. Apex rather narrow, obtusely rounded. Orifice rather elongate, internal sac moderately complex, apparently without a distinct oblique fold near apex. Both parameres elongate, rather parellel, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Figs 167l). Stylomere rather wide, fairly parellel, lateral border barely concave, apex obliquely transverse, with 3 elongate setae at apex. Lateral plate moderately elongate, with 1-2 elongate apical setae.

Variation. Due to limited material only little variation noted in size and degree of puncturation of surface.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of gum-type eucalypt in 750 m altitude. Dated specimens captured in April, September, November, and December.

Distribution (Fig. 621). Australian Capital Territory and adjacent southernmost New South Wales.

Material examined (5). Only the type series.

Etymology. The name refers to the type locality of this species, the Black Monutain near Canberra.

Adelotopus puncticollis Notman, 1925

This species occurs in two subspecies, an eastern one in eastern South Australia, Victoria, and southwestern New South Wales, and a western subspecies in the interior of southwestern Australia.

Diagnosis. Medium-sized, rather elongate, convex, black species with large reddish sutural spot in apical two thirds of elytra, that leaves only a more or less wide lateral margin black. Distinguished from related species by the glossy surface, fairly wide, slightly conical, coarsely and rather regularly punctate pronotum, sparsely, though not uniseriately punctate, impilose elytral intervals, punctate elytral striae, the acute, dentiform apex of the aedeagus, the wide, at apex more or less obliquely transverse stylomere, and the short lateral plate.

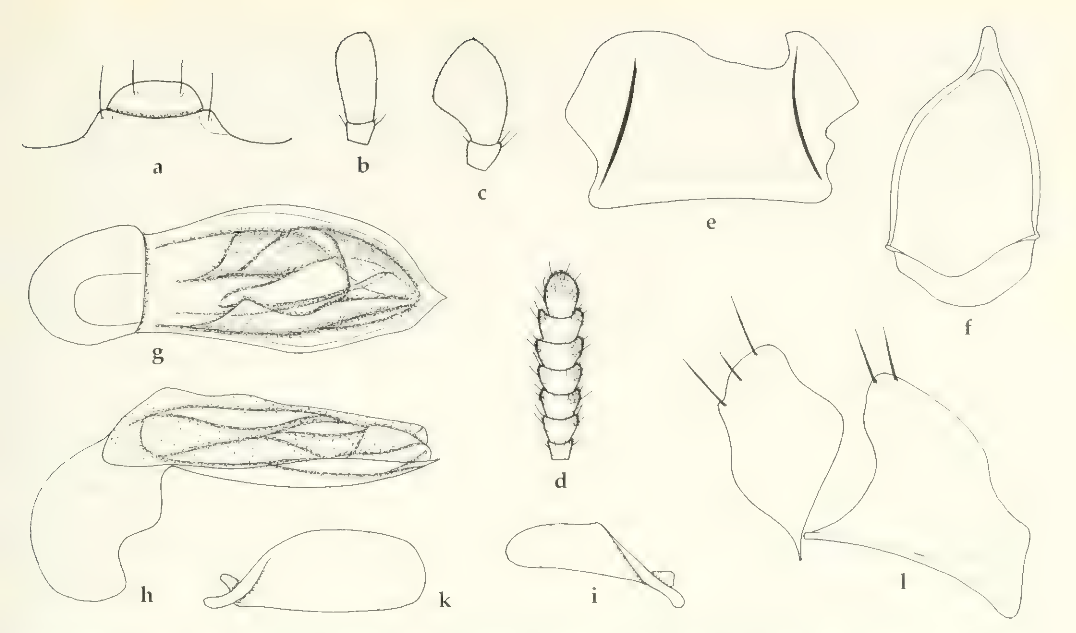
Adelotopus puncticollis puncticollis Notman, 1925
Figs 168, 356, 507, 621

Adelotopus puncticollis Notman, 1925, p. 8, 9, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

Types. Holotype: ♂, 2588 Victoria, Type, *Adelotopus puncticollis* Ntm det Ntm. (AMNH).

Type locality: "Victoria".

Diagnosis. Subspecies distinguished by generally larger size, wider elytral spot, less dark colour of surface, and usually more conical and less convex lateral margins of pronotum that are less incurved at base.



Figs 168a-l. *Adelotopus puncticollis puncticollis* Notman. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 4.9-6.0 mm. Ratios. Width/length of pronotum: 1.24-1.35; width base/apex of pronotum: 1.42-1.47; width pronotum/head: 1.51-1.57; length/width of elytra: 1.65-1.73; length elytra/pronotum: 2.25-2.38.

Colour (Fig. 356). Piceous-black to black, lateral borders of pronotum and elytra more or less distinctly reddish translucent. Elytra with large reddish sutural spot in apical two thirds that leaves anteriorly a more or less wide lateral margin black, but the apical fifth is completely red. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 168a-d). Rather short, moderately wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture more or less distinct, somewhat triangular, sometimes almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally oblique, apex acutely angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna rather narrow and moderately elongate, fairly parallel, 8th-9th antennomeres c. 1.6 × as wide as long. Microreticulation absent, puncturation rather dense, double, coarse punctures mixed with much finer ones. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 356). Moderately narrow, fairly elongate, convex, slightly wider than long, more or less conical, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex rather acute, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, slightly convex in excision, faintly bordered. Sides more or less distinctly convex, slightly oblique. Margins very narrow, barely chanelled, coarsely bordered. Basal angles rectangular, very shortly rounded off. Base faintly convex, moderately coarsely bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation rather dense, coarse, though becoming finer and less dense towards base, also somewhat finer in middle, surface impilose, highly glossy.

Elytra (Figs 356, 507). Rather narrow and elongate, fairly convex, rather parallel. Lateral borders faintly convex. Apex wide, transverse, truncature markedly convex, in middle distinctly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow throughout, partly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 6 or 7 rather spaced pores behind shoulder, but pores small and difficult to detect. Setae fairly elongate. Scutellum very wide. Striae including sutural stria marked by rows of moderately fine punctures. Microreticulation absent, each interval with fine, sparse, irregular, not rasp-like punctures, surface asetose, markedly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, convex, apex wide, convex, passing over in an almost right angle from ventral surface, barely setose. Metepisternum very elongate, c. 2.2 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface sparsely punctate and rather shortly setose.

Legs. rather elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur moderately deep, anterior plate overlapping the groove only for apical forth, posterior border of groove sharp. Femur wide. Metatibia elongate, c, 5.5 × as long as wide, 1st tarsomere of metatarsus c. 2.2 × as long as wide.

♂ genitalia (Figs 168e-k). Genital ring rather wide, convex, barely asymmetric, with slightly asymmetric, rather small, fairly excised base. Sternum VII rather wide, apically obliquely convex, with rather deep excision, base faintly excised, basal angles rounded, lateral parts fairly short. Aedeagus rather short, moderately depressed, in middle markedly widened, strongly narrowed to apex, faintly asymmetric. Basal part fairly short, moderately bent. Lower surface strongly convex. Apex acute, dentiform. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres elongate, rather parallel, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Figs 168l). Stylomere wide, both median and lateral borders slightly concave, apex obliquely transverse or gently convex, with 3-4 elongate apical setae. Lateral plate short, with 2-4 elongate apical setae.

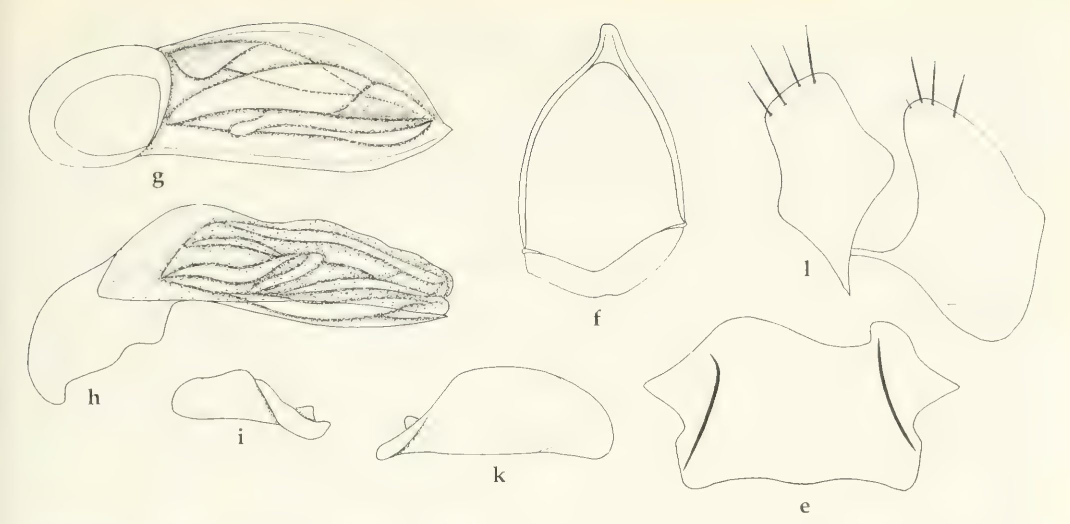
Variation. Apart from considerable diffences in size, there is some variation in shape of pronotum, which may be rather conical or laterally rather convex, and in degree of puncturation on head, pronotum, and elytra. The red elytral spot is always wide, rather well defined, and reaches the lateral margin on a wide front.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Dated specimens captured only in December. Most specimens, however, undated and very old.

Distribution (Fig. 621). South Australia, Victoria, southwestern New South Wales, ? Tasmania. The latter record is rather doubtful and refers to a single, barely dated species only labelled "Tasmania" that was even identified "*gaverei*" which is a name of an asiatic *Cryptocephalomorpha* species. The subspecies seems to live inland or at least in rather dry environments.

Material examined (14). **SA:** 1♀, Kilkerran, *filiformis* Cast., *Adelotopus filiformis* Cast. (SAMA); 1♀, Rev. A. P. Burgess, *Adelotopus filiformis* Cast. (SAMA); 1♂, Rev. A. P. Burgess (SAMA). – **Vic:** 1♀, Inglewood, C. Oke, *Adelotopus puncticollis* Notm. (NMV); 1♀, Ballarat, C. Oke, *Adelotopus puncticollis* Notm. ? *filiformis* Cast., det. *puncticollis* (NMV); 1♀, Sea Lake, Goudie, *Adelotopus bicolor* Cast. (SAMA); 1♂, 2588, Type, *Adelotopus puncticollis* Ntm det Ntm. (AMNH). – **Tas:** 1♀, 1916 26, det. *gaverei* (SMTD). – **NSW:** 1♂, 2♀♀, Gnalta Stn. nr Broken Hill, 9.XII.1964, N. Mc Farland (CBM, SAMA); 1♀, Murray R. S. Australia A. H. Elston, *Adelotopus filiformis* Cast. 2097, A. H. Elston Coll., *A. filiformis* (AMS); 1♀, Murray R. S. Australia A. H. Elston, *Adelotopus filiformis* Cast. Id. by A. M. Lea, A. H. Elston Coll. (AMS). – **Aus:** 1♂, F. Walker 1868 (OUM).



Figs 169e-l. *Adelotopus puncticollis angustemaculatus,* subspec. nov. Details of genitalia. For legends see fig. 100.

Adelotopus puncticollis angustemaculatus, subspec. nov.

Figs 50, 169, 357, 508, 621

Types. Holotype: ♂, Norseman, 60 km E. 32.05S, 122.35E Western Australia 24 Feb. 1989 M. S. Harvey & M. E. Blosfelds (WAM 94/882). – Paratypes: 1♂, Broomehill 33.51S, 117.38E Western Australia 6 June 1986 R. P. Mcmillan (WAM 94/867); 1♂, 1♀, Australien, WA 53, 5 km n. Varley, 14.11.1987, M. Baehr (CBM); 1♀, Australien, WA 49, 33 km nnw. Raventhorpe, 13.11.1987, M. Baehr (CBM); 1♀, 31.X. 90 Mi W Coolgardie, West. Australia, J. Sedlacek Collector (CSB).

Diagnosis. Subspecies distinguished by generally lesser size, narrower elytral spot, deep black colour of surface, and not conical and more convex lateral margins of pronotum that are distinctly incurved at base.

Description

Measurements. Length: 4.8-4.9 mm. Ratios. Width/length of pronotum: 1.31-1.39; width base/apex of pronotum: 1.42-1.46; width pronotum/head: 1.53-1.57; length/width of elytra: 1.59-1.70; length elytra/pronotum: 2.29-2.37.

Colour (Figs 50, 357). Deep glossy black, elytral spot narrower, leaving a wide, black margin. Otherwise similar to nominate subspecies.

Head. Similar to nominate subspecies, though puncturation generally even denser.

Pronotum (Fig. 357). Rather similar to nominate subspecies, though less conical, laterally more convex, and distinctly incurved to base, hence widest diameter clearly in front of base.

Elytra (Figs 50, 357, 508). Rather similar to nominate subspecies, though elytra generally slightly wider and slightly more markedly punctate.

Lower surface. Similar to nominate subspecies

Legs. Similar to nominate subspecies.

♂ genitalia (Figs 169e-k). Rather similar to nominate subspecies, though in the few specimens available genital ring even wider, sternum VII with bisinuate base and lateral parts rather elongate. Aedeagus similar, though slightly shorter.

♀ genitalia (Figs 169l). Rather similar to nominate subspecies, though apex obliquely transverse.

Variation. Little variation recognized, especially the three specimens from Varley and Raventhorpe very similar, the single specimen from Coolgardie apparently not fully coloured and less densely and coarsely punctate.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of gum-type eucalypts. Holotype "under bark of *Eucalyptus* sp.". Dated specimens captured in February, June, October, and November.

Distribution (Fig. 621). Southwestern Australia.

Material examined (6). Only the type series.

Etymology. The name refers to the narrower elytral spot compared with that of the nominate subspecies.

rubiginosus-group

Diagnosis. Small to medium-sized, rather convex, reddish to piceous species. Labrum bisetose; glossa c. 10-12-setose; lateral margin of pronotum rather narrow, basal angle widely rounded; basal border line of elytra abbreviated, attaining at most middle of base; scutellar pore absent; lateral margin of elytra without fringe of setae; series of umbilical pores with 6 subhumeral pores only; abdominal sterna usually with 1, rarely without ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather wide and short, asymmmetric, apex rounded off; internal sac complicate, apex with a distinct oblique fold; apical margin of ♀ tergum VIII with 4 median setae, very rarely with additional lateral setae.

Larvae. 1st instar larvae known of 6 species.

Distribution. 21 species that occur virtually throughout continental Australia, though not in Tasmania and New Guinea.

Systematic position. This group is certainly the adelphotaxon of the *laevis*-group (see below). Both groups, however, are perhaps the adelphotaxon of the *seriepunctatus*-group. Compared with the *laevis*-group the *rubiginosus*-group is more apomorphic in the absence of elongate setae at the margins of the elytra, but more plesiomorphic in the rounded apex of the aedeagus, and perhaps also in the presence of a distinct oblique fold in the apex of the internal sac. Both groups are more apomorphic than the whole lineage from the *politus*-group to the *linearis*-group by their uniformly light colour, highly convex body shape, and markedly abbreviated basal border of elytra.

Note. The many taxa of externally very similar, uniformly reddish but, on the other hand, very variable beetles can be only distinguished by scrutinized examination of their genitalia. The ♀ genitalia, however, are generally more variable, so correct identification of females may be quite commonly difficult or even impossible. Due to the very limited knowledge of distribution and habits of all species of this group, decisions between what is a species, a valid subspecies, or merely a local variation are especially difficult. So it is possible that some taxa named herein on the base of single specimens bearing aberrant genitalia or otherwise external character states, actually do not merit the rank given herein.

Adelotopus rubiginosus Newman, 1856
Figs 170, 358, 509, 622

Adelotopus rubiginosus Newman, 1856, p. 128; Notman 1925, p. 7, 10, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

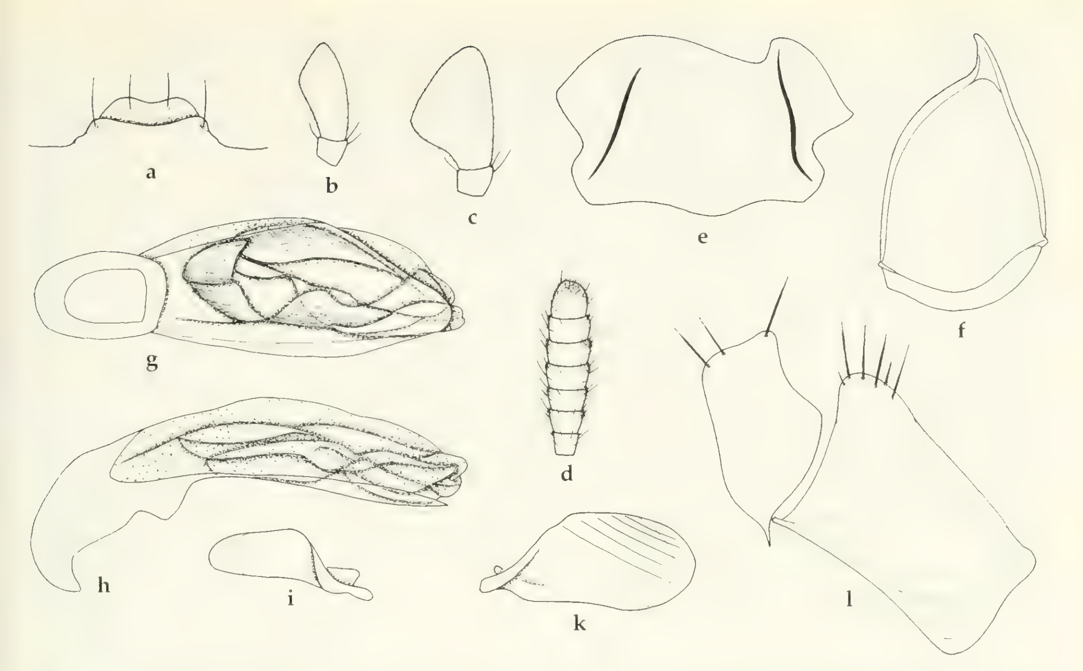
Adelotopus castaneus Castelnau, 1867, p. 33; 1868, p. 119; Macleay 1871, p. 95; Notman 1925, p. 7, 10, 28; Csiki 1933, p. 1634; Moore 1967, p. 321; Moore et al. 1987, p. 50 (**new synonymy**).

Types. Of *rubiginosus*: Lectotype (by present designation): ♂, Type H.T., Type, *Adelotopus rubiginosus* Newm. Z. 5028 (BMNH).

Of *castaneus*: Lectotype (by present designation): ♂, Swan River, Coll. Castenau, *Castaneus* Cast. Swan Riv., Holotypus *Adelotopus castaneus* Castelnau, 1867 (MCSN).

Type localities. Of *rubiginosus*: Australia, no locality given.

Of *castaneus*: "Swan River", Western Australia.



Figs 170a-l. *Adelotopus rubiginosus* Newman. Details of head and genitalia. For legends see fig. 100.

Diagnosis. Small to medium-sized, completely reddish species, distinguished by but moderately wide, convex pronotum, absence of microreticulation even on head, dense and rather coarse punctuation of head and pronotum, asymmetric ♂ gential ring, moderately widened, on lower surface not striate aedeagus with shortly rounded apex, apically rounded left paramere, and wide, apically obliquely transverse stylomere. Further distinguished from the most closely related species *A. distinguendus*, spec. nov. by narrower, more convex pronotum, narrower aedeagus with narrower apex, wider stylomeres and longer lateral plate; and from *A. foliaceus*, spec. nov. by even narrower aedeagus, longer stylomeres, and absence of additional setae on the apical margin of ♀ tergum VIII.

Description

Measurements. Length: 3.7-5.5 mm. Ratios. Width/length of pronotum: 1.40-1.51; width base/apex of pronotum: 1.37-1.48; width pronotum/head: 1.47-1.61; length/width of elytra: 1.54-1.65; length elytra/pronotum: 2.20-2.48.

Colour. Upper and lower surface including mouth parts, antennae, and legs more or less light reddish, sometimes apex of elytra faintly darker.

Head (Figs 170a-d). Rather short, fairly wide, rather depressed. Anterior border but gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus elongate, slightly widened, though not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation modserately fine, fairly dense. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 358). Rather wide, markedly convex, slightly humped, distinctly wider than long, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex

obtusely rounded, fairly oblique, attaining posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, rather oblique. Margins rather wide, rather chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, moderately coarsely bordered. Surface near base with shallow transverse impression. Microreticulation absent, punctuation fairly coarse, dense, surface impilose, highly glossy.

Elytra (Figs 358, 509). Moderately elongate, rather convex, though slightly depressed on disk, rather parallel, though faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, sometimes with few elongate setae behind shoulders. Marginal channel narrow, in basal third even narrowed, then widened again, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather coarse, fairly dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, convex, apex narow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.8-1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Moderately elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third only, posterior border of groove sharp. Femur wide. Metatibia moderately elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 170e-k). Genital ring rather wide, convex, fairly highly asymmetric, left arm convex, right almost straight, with elongate apex, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base bisinuate, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle moderately widened, slightly asymmetric, left side straight, right side straight to faintly convex. Basal part rather long, moderately bent. Lower surface straight to gently convex, not perceptibly striped. Apex moderately narrow, shortly rounded off, rather symmetric. Orifice rather elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, square, with widely rounded apex, left paramere considerably larger than right, with an oblique edge, upper part of lateral side moderately striped.

♀ genitalia (Fig. 170l). Stylomere wide, apex wide, obliquely transverse, lateral margin concave, with 2-3 elongate apical setae. Lateral plate elongate, with 3-4 elongate and 2-3 short apical setae. Apical margin of ♀ tergum VIII without additional setae.

Variation. There is considerable variation of size, relative width of pronotum, length of elytra, and puncturation. This variation is somewhat regional, as in Central Australian specimens the puncturation on head and pronotum is generally slightly less coarse and dense, and the lateral margin of the elytra bears sometimes some hairs also behind shoulders. Because ♂ and ♀ genitalia generally show little variation, I refrained from giving the Central Australian specimens an separate taxonomic status.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. A specimen collected by me under bark of gum-type eucalypt, other specimens collected "under bark". Dated specimens captured from October to April, though relatively few specimens dated. This species occurs also far inland.

Distribution (Fig. 622). Eastern Australia from South Australia through Victoria, Australian Capital Territory, New South Wales to north Queensland, also central Northern Territory and southwestern Australia, ? Batchian. The latter record from this Molukkan island is certainly wrong.

Material examined (336). **SA:** 1♂, 3♀♀, 758, Port Lincoln Blackburn, *aphodioides* Westw., 7104 *Adelotopus aphodioides* Westw. (SAMA); 1♀, 758, Port Lincoln Blackburn, Sharp Coll., det. *rubiginosus* (BMNH); 3♂♂, 9♀♀, Alde 2/4, Adelaide Griffith, Griffith Collection Id. by A. M. Lea, 254 *Adelotopus aphodioides* Westw. 2472 (SAMA); 1♂, 42158, *rufescens* Chd., Schomb., *castaneus* Casteln. Adelaide (MNHB); 1♀, Adelaide, det. *castaneus* (MNHB); 1♂, Adelaide, det. *castaneus* (MNHB); 1♀, Adelaide, Adelaide Coll. Castelnau, *aphodioides* (MCSN); 2♀, Adelaide Coll. Castelnau, det. *aphodioides* (MCSN); 1♂, 2♀♀, Mt. Lofty, J. G. O. Tepper, F. E. Wilson Collection, *A. aphodioides*, Westw. As id. by Blackburn (NMV); 1♂, 1♀, Yorketown, CNHM 1955, Karl Brancsik Coll. Ex Eduard Knirsch, *Adelotopus castaneus* Casteln., *Adelotopus castaneus* Cast. det. G. E. Ball 1987 (FMNH, UASM); 1♂, 3♀♀, Yorketown, CNHM 1955, Karl Brancsik Coll. Ex Eduard Knirsch, *Adelotopus castaneus* det. Ball (FMNH,

UASM); 1♂, Yorketown, CNHM 1955, Karl Brancsik Coll. Ex Eduard Knirsch (UASM); 1♂, Yuma Ck. by Yuma 23.X.1973. G. F. Gross (SAMA); 1♂, 1♀, Wentworth Murray R. 25.XII.30, C. E. Clarke Collection (BMNH); 1♀, Wentworth Redcliffs Murray R. 24.-27.XII.30 C.E.C., C. E. Clarke Coll. (BMNH); 1♀, Murray R. A. H. Elston, A. H. Elston Collection, det. *aphodioides* (AMS); 7♂♂, Mt. Serle N. Flinders Ra. Hale & Tindale (SAMA); 2♂♂, 2♀♀, Everard Rgs., S.A. to Warburton Rgs., W.A. A. Brumby (SAMA); 1♀, 2 mi. from Odlawirra (Adel. site) 23.XII.1973, G. F. Gross (SAMA); 2♀♀, A. H. Elston, 363 *Adelotopus aphodioides* Westwood Id. by T. G. Sloane (AMS); 1♀, C. French's Coll., det. *aphodioides* (NMV); 1♀, A. Austr. Witte., 19, Soc. Ent. Belg. Coll. PUTZEYS, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, 2♀♀, det. *aphodioides* (ANIC); 2♂♂, 1♀, *Adelotopus Aphodioides*, Westw. (SAMA); 1♀, Nat. Mus. Victoria (NMV); 1♀, Ex Musaeo H. W. Bates 1892 (MNHN). – **Vic:** 2♀♀, Lake Hattah J. E. Dixon, *Adelotopus micans* Blk[b]. (NMV); 7♂♂, 7♀♀, Lake Hattah J. E. Dixon (ANIC, NMV); 2♀♀, Lake Hattah, XI.1924 C. Oke (NMV); 1♂, 3♀♀, Echuca 14.XII.1966, leg. Bornemissza (HNMB); 1♀, Birchip III.04, *Adelotopus aphodioides* Westw., J. C. Goudie Collection (NMV); 1♀, Birchip, J. C. Goudie (SAMA); 2♂♂, Dimboolah 9.I.87 Tepper (SAMA); 1♀, Mallee District, Nat. Mus. Victoria – C. French's Collection (NMV); 1♂, Melbourne:, Pascoe Coll., *castaneus* Cast. (BMNH); 2♂♂, 1♀, K 12380, *Adelotopus aphodioides* West. Melbe. (AMS); 1♀, Melbourne, Ex Musaeo H. W. Bates 1892 (MNHN); 3♂♂, 1♀♀, Melbourne Coll. Castelnau. *Aphodioides* W. (Melbourne) (MCSN); 1♂, 1♀, Melbourne Coll. Castelnau, det. *aphodioides* (MCSN); 1♀, Melbourne Coll. Castelnau, 80, *aphodioides* Westw. Melb. (MCSN); 1♂, 1♀, Alberton, *Adelotopus aphodioides* Ww. Det. B. P. Moore '66 (CMC, FMT); 1♂, 1♀, Alberton, det. *aphodioides* (FMT); 1♂, Woorinen, 5.I.36 F. E. Wilson, F. E. Wilson Coll., *A. castaneus* (NMV); 2♂♂, Kiata, 31.XII.18 F. E. Wilson, F. E. Wilson Collection, *Adelotopus aphodioides* Westw. Id. by T. G. Sloane (NMV); 2♂♂, Kiata, I.1918 R. Oldfield, F. E. Wilson Collection, *Adelotopus aphodioides* Westw. Id. by T. G. Sloane (NMV); 1♂, 1♀, Kiata, I.1918 R. Oldfield, T.G.S./61 (ANIC); 2♀♀, Kiata, I.1918 R. Oldfield, 363 *Adelotopus aphodioides* Westw., A. H. Elston Collection (AMS); 2♂♂, Kiata, I.1918 R. Oldfield, (ANIC); 1♂, 1♀, Wallan, C. Oke, det. *aphodioides* (NMV); 2♂♂, 1♀, Kerrisdale 1.I.24, J. E. Dixon (NMV); 6♂♂, 3♀♀, Kerrisdale 1.I.24 (NMV); 1♀, Gippsland 2, det. *aphodioides* (NMV); 2♂♂, Field Mus. (F. Psotas Coll.), *Adelotopus castaneus* det. Ball (FMNH); 1♂, P[t]. West Victoria, det. *rubiginosus* (BMNH); 1♂, 1♀, Nat. Mus. Victoria, C. French's Collection, *Adelotopus Hydrobioides* Westw. (NMV); 1♀, Field Mus. (F. Psotas Coll.), *Adelotopus aphodioides* Westwood, *Adelotopus castaneus* det. Ball (FMNH); 1♂, 875, 97, *Adelotopus aphodioides* Westw., 35, Howitt Colln (NMV); 1♀, 259, W. Edwards, det. *punctatus* (MCZ); 1♀, 2592, *castaneus* Cast. (AMNH); 3♀♀, 2592, det *castaneus* (AMNH); 1♀, 2592, Ex Musaeo H. W. Bates 1892 (MNHN); 1♀, Coll. B. Schwarzer, *brunneus* Cast. (SMF); 2♂♂, 2♀♀, Edwards, Fry Coll. det. *rubiginosus* (BMNH); 1♂, Ex Musaeo H. W. Bates 1892 (MNHN); 1♂, 1♀, Janson Acq. (MNHN). – **ACT:** 5♀♀, 5 (sex?), Canberra NSW 1926 in WF (ANIC); 2 (sex?), Canberra N.S.W. 1192 In WF* (ANIC). – **NSW:** 1♂, Culcairn, E. W. Ferguson Collection (ANIC); 1♂, 4♀♀, Dubbo, 328. Rev. A. S. Barrett, K 60444, det. *aphodioides* (AMS); 1♂, Wentworth Murray Rv. 25.XII.30, C. E. Clarke Collection B. M. 1957-24., *A. scolytides* Newm., *scolytides* (BMNH); 1♂, 2492 Bathurst (SAMA); 2♀♀, Coragabal, F. H. Taylor, *Adelotopus* sp., J. C. Goudie Collection (NMV); 2♂♂, 1♀, Coragabal, F. H. Taylor (ANIC); 2♀♀, Grenfell, E. W. Ferguson Collection, *A. aphodioides* Westw. As id. by Blackburn (ANIC); 2♂♂, Grenfell, E. W. Ferguson Collection (ANIC); 1♀, Caldwell, Goudie, J. C. Goudie Collection (NMV); 4♀♀, Morilla E.W.F. 8.I.08, Not *A. aphoides* (sic!) by obtuse angles thorax (ANIC); 9♂♂, 15♀♀, 1 (sex?), Morilla 11.II.11 (ANIC); 4♂♂, 7♀♀, Morilla (ANIC); 1♀, 1 (sex?, fragment), sp 1 sp ?, Morilla (ANIC); 1♀, Westl. Riverina Wait leg. Lüddemann ded. (DEIB); 1♀, M.F.L. (BMNH); 1♀, Clarence River Coll. Castelnau, Clarence Riv., det. *aphodioides* (MCSN); 1♀, N. Galle, *rufescens* Chaud., Ex Musaeo Mniszech (MNHN). – **Qld:** 1♀, Qld 2, 5 km s. Ipswich 4.XI.1990, M. Baehr (CBM); 1♂, 1♀, Wide Bay, *..lotop.* 2491 ..eensl. (SAMA); 1♀, 10508, Godeffroy Collection, *Adelotopus castaneus* (Casteln.) Peak Downs (NMV); 1♂, 1♀, Mus. Godefroy Peak Downs, P.D., 10508, *Adelotopus castaneus* Casteln., Museum Leiden *Adelotopus castaneus* Cast. Det., *Castaneus* Casteln. (NNML); 3♂♂, 1♀, Port Denison, Port Denison Coll. Castelnau, det. *aphodioides* (MCSN); 1♂, Mt. Isa III.1986, J. H. Sedlacek Collector (CSB); 2♀♀, Masters, Fry Coll. det. *rubiginosus* (BMNH); 1♂, Simson, Fry Coll. det. *rubiginosus* (BMNH). – **NT:** 1♀, Alice Sp. IV.71, J. Sedlacek Collector (CSB); 2♂♂, 1♀, Alice Springs 20-24.III.1971, J. & M. Sedlacek Colls. Bishop Museum (BMH); 1♂, Alice Springs 350-650 m 20-24.XI.1968, N. L. H. Krauss Coll. Bishop Museum (BMH); 1♀, Comiston Station, near Alice Springs M. W. Mules (SAMA); 1♀, 23.37S 133.54E 10 km N by E of Alice Springs 6.XI.1979 T. Weir (ANIC); 3♂♂, 16♀♀, Ellery Ck. e. Hermannsburg, 1.II.1989 leg. P. A. Meyer (CBM, ZSM); 1♀, Daly Waters, J. Sedlacek Collector (CSB); 1♂, Daly Waters (CSB); 1♀, IV.71, J. Sedlacek Collector (CSB). – **WA:** 1♂, Swan River, Coll. Castenau, *Castaneus* Cast. Swan Riv., Holotypus *Adelotopus castaneus* Castelnau, 1867 (MCSN); 2♂, Australia occid. 1192 (HNMB). – **Aus:** 1♂, *rufescens* Chaud., Riv. Paroo Castelnau, Ex Musaeo Chaudoir (MNHN); 1♂, Rhynie, Blackb's Coll., 7138 aus lia (SAMA); 1♂, 1♀, *Adelotopus hydrobioides* Westw. Hay (?), 423, G. C. Champion Coll. (BMNH); 1♂, Nov. Holl. N. West, Fry Coll. det. *rubiginosus* (BMNH); 1♂, N. Holl. m. *Adelotopus distinctus* Chaud., Sammlung O. Langenhan (SMTD); 2♂♂, 1214, det. *punctatus* (MCZ); 1♀, Coll. B. Schwarzer, *Adelotopus Aphodioides* Wst. (SMF); 1♂, 758, *Adelotopus aphodioides* Westw. Blackb. 1890 (ANIC); 1♀, W. Edwards, *aphodioides*, det. *punctatus* (MCZ); 1♂, H. Edwards, *Adelotopus aphodioides*, det. *punctatus* (MCZ); 1♂, Coll. E. Witte, *rufescens* (SMF); 1♀, Dohrn 91, *Adelotopus castaneus* Casteln., *Castaneus* Cast. (NHMW); 1♀, 18947, Fry Coll. det. *rubiginosus* (BMNH); 1♂, 1214, det. *punctatus* (MCZ); 1♂, *aphodioides* Westw. (ANIC); 1♀, det. *rubiginosus* (BMNH); 1♂, 1♀, J. Walker 1860 (OUM); 1♀, *Adelotopus castaneus* Cast. dét... (IRSNB); 1♂, 1882 I (NHMW). –

?: 1♀, Mudgee Shphen (?), 254 ?, H. J. Carter Coll., *Adelotopus aphodioides* Westw. (NMV); 5♀♀, Germanton 27.II.11 J.G.S (?) (ANIC); 2♂♂, 2♀♀, E. W. Ferguson Collection, Bachantus (?) Valley, 29.XII.85 Tepper (ANIC); 1♂, 1 (sex?), Gunning (MMS); 1♀, Berwick (NMV); 1♂, Type H.T., *Adelotopus rubiginosus* Newm. Z. 5028, lectotype! (BMNH); 1♀, Coll. L. W. Schaufuss, det. *castaneus* (MNHB); 1♂, *Adelotopus,* Ex Musaeo H. W. Bates 1892 (MNHN); 2♂♂, 1♀, *rufescens* Chaud., Ex Musaeo Chaudoir (MNHN); 1♂, 54 35, det. *rubiginosus* (BMNH); 1♀, 157, *aphodioides* Westw., *Adelotopus punctatus* Cast. (MCZ); 2♂♂, 845, 36, 37, Howitt Colln, det. *aphodioides* (NMV); 2♀♀, 2 (sex?, fragments), *A. aphodioides* (ANIC); 1♂, 54 35, det. *rubiginosus* (BMNH); 1♂, 1♀, Janson Acq. (MNHN); 2♀♀, Collect. Plason (NHMW); 1♀, C. G. Oke Collection No locality (NMV); 1♂, 1♀, M 254 (ANIC); 2♀♀, 70 (ANIC); 1♂, 1♀ (ANIC); 1♂ (NMV). – **Indonesia:** 1♂, Batchian, Bowring 63-47*, det. *rubiginosus* (BMNH).

Adelotopus distinguendus, spec. nov.

Figs 171, 359, 510, 622

Types. Holotype: ♂, Broomehill W. Australia 10.1.82 R. P. McMillan (WAM 94/865). – Paratypes: 1♀, same data (WAM 94/866); 1♀, R. P. McMillan Date 7.1.52 Culham Inquiline, 168, *Adelotopus* sp. (WAM 94/849); 1♀, R. P. McMillan Date 23.12.51 Culham (CBM, WAM 94/848).

Diagnosis. Small to medium-sized, completely reddish species, distinguished by fairly wide pronotum, absence of microreticulation even on head, dense and rather coarse puncturation of head and pronotum, narrow, rather symmetric ♂ gential ring, rather widened, on lower surface not striate aedeagus with widely rounded apex, and rather narrow, apically obliquely transverse stylomere. Further distinguished from the most closely related species *A. rubiginosus* Newman by wider, less convex pronotum, wider aedeagus with wider apex, narrower stylomeres and much shorter and wider lateral plate; and from *A. foliaceus*, spec. nov. by wider pronotum, slightly narrower aedeagus with widely rounded apex, longer stylomeres, and absence of additional setae on the apical margin of ♀ tergum VIII.

Description

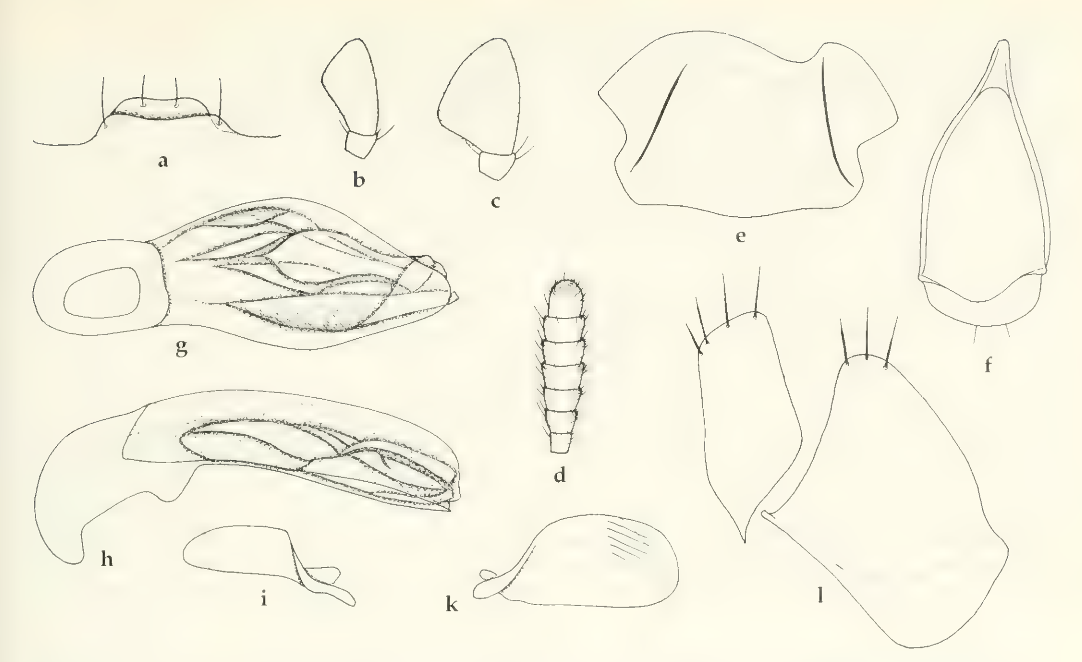
Measurements. Length: 3.8-4.9 mm. Ratios. Width/length of pronotum: 1.51-1.55; width base/apex of pronotum: 1.44-1.48; width pronotum/head: 1.56-1.62; length/width of elytra: c. 1.45-1.55; length elytra/pronotum: c. 2.35-2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs more or less light reddish, sometimes apex of elytra faintly darker.

Head (Figs 171a-d). Rather short, fairly wide, rather depressed. Anterior border but gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus elongate, barely widened. Terminal palpomere of labial palpus moderately wide, rather securiform. Antenna rather short and wide, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation moderately fine, fairly dense. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 359). Rather wide, markedly convex, slightly humped, distinctly wider than long, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtusely rounded, fairly oblique, attaining posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, rather oblique. Margins rather wide, rather chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, moderately coarsely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation fairly coarse, rather dense, surface impilose, highly glossy.

Elytra (Figs 359, 510). Rather short and wide, rather convex, though slightly depressed on disk, rather parallel, though faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, sometimes with few elongate setae behind shoulders. Marginal channel



Figs 171a-l. *Adelotopus distinguendus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

narrow, in basal third even narrowed, then widened again, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather coarse, fairly dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, convex, apex narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum fairly elongate, c. 1.6-1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Moderately elongate, 1st tarsomere of protarsus almost as long as wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third only, posterior border of groove sharp. Femur wide. Metatibia moderately elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 171e-k). Genital ring rather narrow, little convex, barely asymmetric, with elongate apex, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base faintly bisinuate, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus short, depressed, in middle rather widened, fairly asymmetric, both sides faintly concave. Basal part rather long, moderately bent. Lower surface almost straight, not perceptibly striped. Apex rather wide, widely rounded off. Orifice elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, square, with widely rounded apex, left paramere considerably larger than right, upper part of lateral side moderately striped.

♀ genitalia (Fig. 171l). Stylomere moderately wide, rather parallel, apex wide, obliquely transverse, with 2-4 elongate apical setae. Lateral plate short and wide, with 3-4 elongate apical setae. Apical margin of ♀ tergum VIII without additional setae.

Variation. There is some variation of size and relative shape of pronotum and elytra, and of puncturation of surface.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. One specimen found as "inquiline", unfortunately without additional statement. Thus far captured in December and January.

Distribution (Fig. 622). Southwestern Australia.

Material examined (4). Only the type series.

Etymology. The name refers to the high similarity of this species and *A. rubiginosus* Newman.

Adelotopus foliaceus, spec. nov.

Figs 172, 360, 511, 622

Types. Holotype: ♂, Leas, 3891. 254 *Adelotopus aphodioides* Westw. N. S. Wales (SAMA). – Paratypes: 1♂, Mullaley, Jan 57, N.S.W. F. E. Wilson, F. E. Wilson Collection (NMV); 1♂, Kurting 23.12.23 (NMV); 3♂♂, Dalby, Q. Mrs. F. H. Hobler (CBM, SAMA); 7♂♂, 3♀♀, Australia: N. Queensld. Richmond 1917/1918 (CBM, NHMW).

Diagnosis. Rather small, completely reddish species, distinguished by rather narrow, convex pronotum with rather wide apex and narrow lateral margins, absence of microreticulation even on head, rather fine puncturation on pronotum though coarse puncturation on elytra, markedly convex ♂ genital ring with elongate apex, very wide, asymmetric, on lower surface only laterally somewhat striate aedeagus with rather acute apex, large, apically straight, strongly striate left paramere, and short stylomeres. Further distinguished from the most closely related species *A. rubiginosus* Newman by much wider aedeagus, shorter stylomeres, and presence of additional setae on the apical margin of ♀ tergum VIII; and from *A. distinguendus*, spec. nov. by narrower pronotum, even wider aedeagus with rather acute apex, shorter stylomeres, and presence of additional setae on the apical margin of ♀ tergum VIII.

Description

Measurements. Length: 4.3-4.9 mm. Ratios. Width/length of pronotum: 1.44-1.51; width base/apex of pronotum: 1.37-1.42; width pronotum/head: 1.45-1.51; length/width of elytra: 1.56-1.60; length elytra/pronotum: 2.35-2.42.

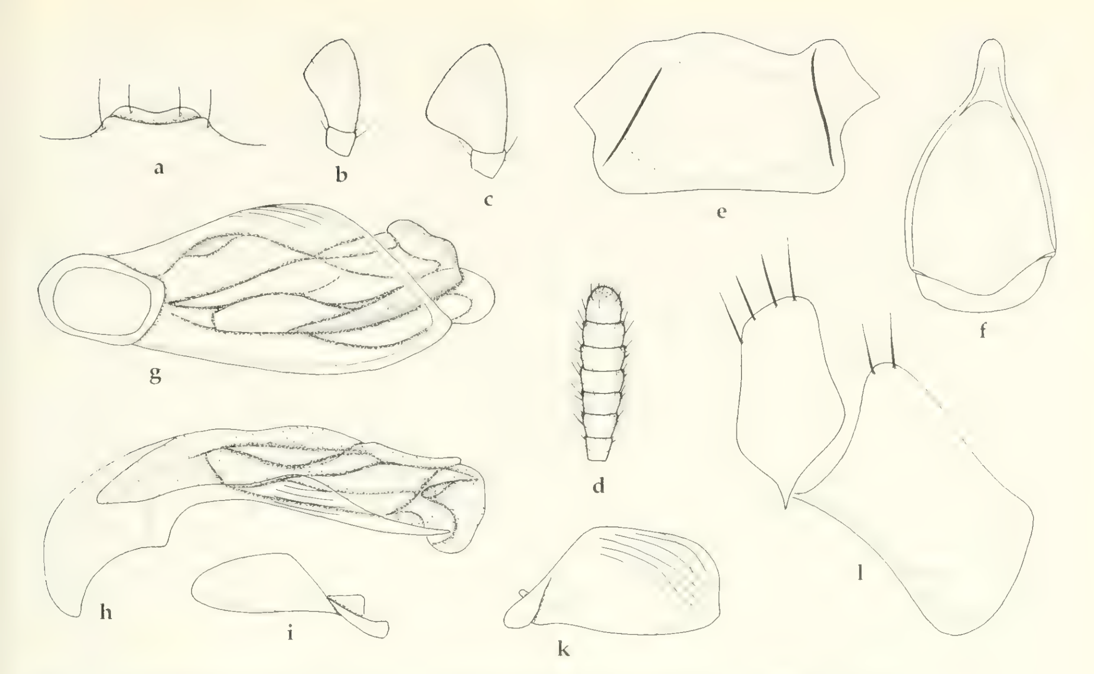
Colour. Upper and lower surface including mouth parts, antennae, and legs light reddish.

Head (Figs 172a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus slightly widened, barely securiform. Terminal palpomere of labial palpus wide, securiform. Antenna moderately elongate, in middle distinctly widened, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation rather fine, fairly dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 360). Moderately wide, rather highly convex, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex obtuse, fairly oblique, barely ataining posterior border of eyes. Apex fairly excised, very convex in excision, faintly and irregularly bordered. Sides moderately convex, fairly oblique. Margins rather narrow, narrowly chanelled, finely bordered. Basal angles widely rounded off. Base straight, rather coarsely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately fine, rather dense, surface impilose, highly glossy.

Elytra (Figs 360, 511). Moderately wide, convex, faintly depressed on disk, parallel. Lateral borders usually slightly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately coarse, rather dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed,



Figs 172a-l. *Adelotopus foliaceus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 5.5-6 × as long as wide, 1st tarsomere of metatarsus c. 2.3-2.4 × as long as wide.

♂ genitalia (Figs 172e-k). Genital ring rather wide, convex, moderately asymmetric, with rather elongate apex, with slightly asymmetric, small, slightly excised base. Sternum VII wide, apically irregularly convex, with rather shallow excision, base gently bisinuate to slightly convex, basal angles obtusely rounded, lateral parts rather elongate. Aedeagus short, depressed, in middle markedly widened, asymmetric, left side straight or faintly concave, right convex. Basal part moderately long, moderately bent. Lower surface convex, on left side slightly striped. Apex narrow, acute to slightly obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather large, right with widely rounded apex, left considerably larger than right, with transversely cut apex and strong stripes on upper part.

♀ genitalia (Fig. 172l). Stylomere short and wide, apex wide, obliquely rounded, with 4 markedly elongate apical setae. Lateral plate rather elongate, with 2-3 elongate apical setae. Apical margin of ♀ tergum VIII with 2-3 additional lateral setae.

Variation. Rather little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Dated specimens collected in December and January.

Distribution (Fig. 622). New South Wales, southern and northern central Queensland, ? northern Victoria. The latter record refers to a specimen labelled "Kurting" without state record. I think that means a locality in northern Victoria.

Material examined (16). Only the type series.

Etymology. The name refers to the very wide, foliaceous aedeagus.

Adelotopus laticollis, spec. nov.

Figs 173, 361, 512, 623

Types. Holotype: ♂, Longreach Q.: A. M. Lea, 7669 *Adelotopus castaneus* Cast. Queensland (SAMA) [holotype mounted with seven paratypes on same card, marked HT.]. – Paratypes: 3♂♂, 4♀♀, same data (SAMA); 1♀, P. Lincoln, Port Lincoln Coll. Castelnau, det. *aphodioides* (MCSN); 2♀♀, Gawler Range SA, Austral. 12.1972, M. Baehr (CBM); 1♀, Adelaide SA Griffith, Griffith Coll. Id. by A. M. Lea, 254 *Adelotopus aphodioides* Westw. S.A.2492 (SAMA); 2♀♀, Adelaide Lea, 254, Leas, 3890 *Adeletopus aphodioides* Westw. S. Australia (SAMA); 1♀, 41408, *aphodioides* Westwd. Adelaide (NHMB); 1♀, Adelaide S. Australia (SAMA), 1♀, Adelaide (OUM); 2♀♀, Adelaide Coll. Castelnau, Adelaide, *aphodioides* (MCSN) [mounted with a specimen of *rubiginosus* Newman on same card, the latter marked "r"]; 1♂, 1♀, Adelaide Coll. Castelnau, det. *aphodioides* (MCSN) [mounted with a paratype of *s. sinuaticollis*, spec. nov. on same card, the latter marked "s"]; 1♂, Adel.ᵉ Tarrier, *aphodioides* ?, Soc. Ent. Belg. Coll. PUTZEYS, *Adelotopus aphodioides* Westw. dét. J. Putzeys (IRSNB); 2♀♀, Austral. Yorketown, CNHM Karl Brancsik ex Eduard Knirsch, Pseudomorphini Genus ? sp ? det. D. Shpeley 1987 (FMNH); 1♂, Nat. Mus. Victoria S. Australia, Nat. Mus. Victoria C. French's Coll. 5.11.08, *Adelotopus aphodioides* Westw. S. Australia (NMV); 1♂, The Gorge H. S. Davis 24.10.98 (SAMA); 5♀♀, 2589, S. Austr., det. *aphodioides* (AMNH); 1♂, K 12349, *Adelotopus hydrobioides* Westw. S. Aust. (AMS); 1♂, 1♀, Nat. Mus. Victoria – S. Austr. (NMV); 1♀, S. Austral., W (OUM); 1♀, S. Austr., 2559, Ex Musaeo H. W. Bates 1892 (MNHN); 2♂♂, 1♀, S. Austr. (MMS); 3♂♂, *aphodioides* Westwood, Melbourne Bakewell, Ex Musaeo Chaudoir (MNHN); 1♀, Kiata, V. 31.10.50 F.E.W. ?, det. *castaneus* (NMV); 1♂, Deniliquin 21.1.55 NSW F. E. Wilson, F. E. Wilson Collewction (NMV); 1♂, Dubbo, N.S.W. '28. Rev. A. J. Barrett, K 60444, *A. castaneus* (AMS); 1♂, 1♀, NSW (OUM); 5♂♂, 5♀♀, Longreach Q.: A. M. Lea, Ditto Queensland, det. *castaneus* (SAMA); 1♀, Longreach Q.: A. M. Lea, ac. 23246, *aphodioides* Westw. (AMNH); 1♂, Longreach Q.: A. M. Lea, ac. 23246, *Adelotopus castaneus* Cast. Id. by A. M. Lea (AMNH); 1♂, Longreach Q.: A. M. Lea, ac. 23246, det. *aphodioides* (AMNH); 1♂, Longreach Q., A. M. Lea, ac. 23246, det. *castaneus* (AMNH); 1♂, Winton Q., Lea, *castaneus* Cast. Id. by A. M. Lea, F. E. Wilson Collection (NMV); 1♂, Charters T. 300 m IX.66, J. H. Sedlacek Collector (CBM); 1♀, Australia: N. Queensland 1917/1918, Hughenden N. Queensl. F. M. 11.1.1918 (NHMW); 6♀♀, Alice Springs, C.A. Dec. 1896 (CBM, NMV); 2♀♀, Daly Waters N.T., J. Sedlacek Collector (CSB); 1♂, *A. hydrobioides* Westw. Bundogendra (?) (ANIC); 1♂, Wellington Froggatt 1891, W. W. Froggatt Collection (ANIC); 1♀, Austral. mer., Sharp Coll. 1905-313., *Adelotopus* sp. Voisin du *distinctus*, det. *rubiginosus* (BMNH); 1♀, Australien, Coll. E. Witte, *castaneus*, *Adelotopus Castaneus* Cast. Aust. (SMF C 16272); 1♀, Australia, *Adelotopus distinctus* Chaud. K. K., Coll. Kraatz, *A. distinctus* Chaud. (DEIB); 1♂, *Adelotopus castaneus* Cast. Austral., *Adelotopus aphodioides* Westw. (MCZ); 1♀, Australia, Ex Musaeo E. Steinheil (MNHN); 1♀, Australie, Dohrn, *Adelotopus castaneus* Cast. dét..., *Adelotopus castaneus* Cast. Austral. (IRSNB); 1♂, *rufescens* Chaud., Ex Musaeo Chaudoir (MNHN); 1♀, Putzeys, Fundort ?, Coll. E. Witte, *Adelotopus*? (SMF C 16274); 1♀, Coll. B. Schwarzer, det. *castaneus* (SMF C 16273).

Note. This species has been repeatedly identified as *A. aphodioides* Westwood. Because the types of *A. aphodioides* are not available and presumably lost, it is impossible to verify this determination at present (see under doubtful species).

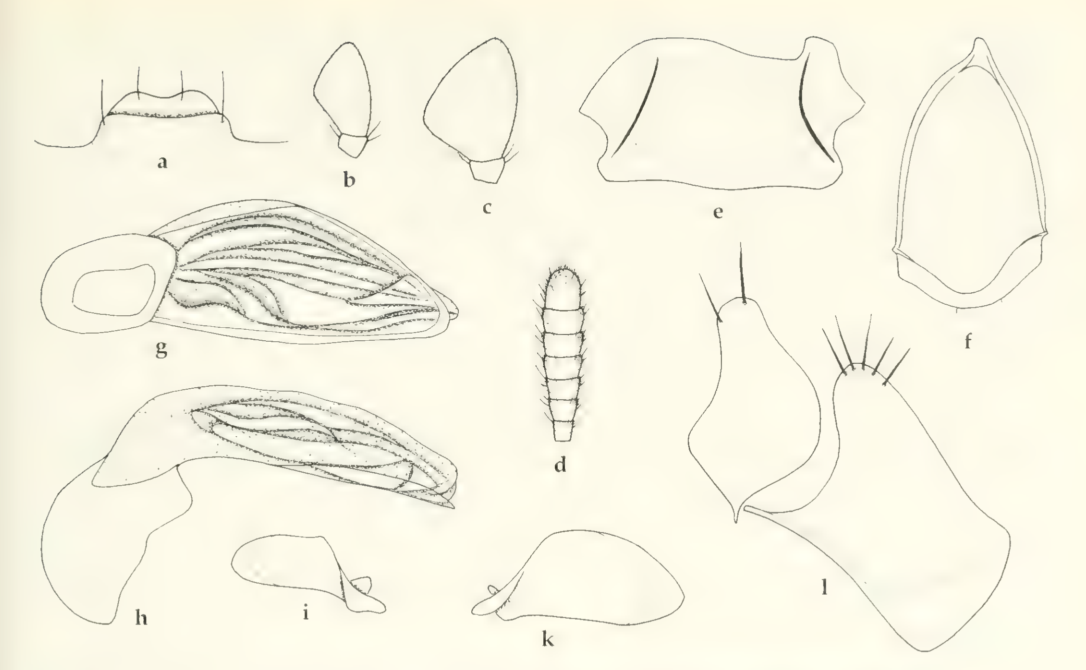
Diagnosis. Medium-sized, completely reddish species, distinguished by wide, moderately convex pronotum, rather dense, moderately fine puncturation of head and pronotum, symmetric ♂ gential ring, moderately widened, on lower surface not striate aedeagus with shortly rounded apex, apically angulate left paramere, and wide, apically strongly narrowed stylomere.

Description

Measurements. Length: 4.7-6.1 mm. Ratios. Width/length of pronotum: 1.58-1.70; width base/apex of pronotum: 1.40-1.51; width pronotum/head: 1.54-1.65; length/width of elytra: 1.47-1.51; length elytra/pronotum: 2.35-2.52.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody faintly darker.

Head (Figs 173a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, faintly securiform. Terminal palpomere of labial palpus very



Figs 173a-l. *Adelotopus laticollis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

wide, markedly securiform. Antenna rather elongate, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, superficial, puncturation very fine, fairly dense. Surface with weak sulcus medially of eyes, usually with some irregular, fine wrinkles, impilose, fairly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 361). Wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtusely rounded, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, rather oblique. Margins rather wide, rather chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, rather irregularly bordered. Surface near base without transverse impression. Microreticulation much reduced, highly superficial, sometimes only faint traces visible, puncturation moderately fine to fairly coarse, dense, surface with more or less distinct rugosities, impilose, highly glossy.

Elytra (Figs 361, 512). Rather wide, moderately convex, slightly depressed on disk, rather parallel, though usually faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine to fairly coarse, fairly dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6.5 × as long as wide, 1st tarsomere of metatarsus almost 2.5 × as long as wide.

♂ genitalia (Figs 173e-k). Genital ring rather wide, convex, barely asymmetric, with rather short

apex, with slightly asymmetric, rather small, fairly excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base gently bisinuate, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle rather widened, asymmetric, left side convex, right side almost straight. Basal part rather long, moderately bent. Lower surface straight to gently concave, not perceptibly striped. Apex moderately narrow, evenly rounded off, rather symmetric. Orifice rather elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, right square, with widely rounded apex, left paramere considerably larger than right, triangular, apex angulate, shortly rounded.

♀ genitalia (Fig. 173l). Stylomere wide, strongly narrowed to apex, apex rounded off, both lateral and median margins concave, with 2-3 elongate apical setae. Lateral plate elongate, with 3-5 elongate and 2-3 short apical setae.

Variation. Very variable species with respect to size, shape and relative width of pronotum, size and density of puncturation, rugosity of pronotum, and shape of apex of stylomere.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Virtually unknown. The very few dated specimens collected in January, February, September, October, and December. Only very few recent captures recorded.

Distribution (Fig. 623). Eastern South Australia, western Victoria, western New South Wales, western Queensland, central Northern Territory. This is virtually an inland species.

Material examined (77). Apart from the the type series one damaged specimen of unknown sex from "Australia: N. Queensld. Richmond 1917/1918" (NHMW) is not included in the type series.

Etymology. The name refers to the wide pronotum.

Adelotopus cribricollis, spec. nov.

Figs 174, 362, 513, 624

Types. Holotype: ♂, Mt. Spec, N.Q. 1/68. G.B., M-114., J. G. Brooks Bequest, 1976 (ANIC) [holotype mounted with a paratype on same card, marked HT.]. – Paratypes: 1♂, same data (ANIC); 1♂, Australia: N.S.W. Trangie 6.XII.1965. O. W. Richards B.M. 1966-325 (BMNH); 2♂♂, Morilla N.S.W. 20.1.27 (ANIC); 2♂♂, 2♀♀, Brisbane Illidge (UQIC); 2♂♂, Toowoomba Brisbane distr. (MNHN); 1♂, Australia: Q'd Rockhampton 26.XII.1967, J. & M. Sedlacek Collectors Bishop (BMH); 4♂♂, 7♀♀, Australia: Qld Rockhampton, 26-27.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH, CBM); 2♂♂, Rock (CSB); 1♂, Australien, Qld 26 Mackenzie R., 79 km n. Dingo, 11.-12.11.1990, M. Baehr (CBM); 1♂, 1755 4.328, Bowen Queensland A. Simson, *Adelotopus castaneus* Cast. By Simson's number (SAMA); 2♂♂, 1♀, Port Denison Coll. Castelnau, det. *aphodioides* (MCSN); 1♂, 2♀♀, Port Denison, Port Denison Coll. Castelnau, det. *aphodioides* (MCSN) [mounted with four specimens of *rubiginosus* Newman on same needle, upper card = *cribricollis*]; 1♀, *rufescens* Chaud., P. Denison, *aphodioides* Westw., Ex Musaeo Mniszech (MNHN); 2♂♂, Australia: Qld Charters Towers 196, J. &. M. Sedlacek Collectors BISHOP, 22-20.XI.1967 (BMH); 3♂♂, Australia: W. Paluma NQ 13.I.70 J. G. Brooks, det. *aphodioides* (CMC); 1♂, Archers Ck. NQ 1/55 GB., M. 186, *castaneus* Cast. 1577. J. G. Brooks Bequest, 1976 (ANIC); 1♂, Archers Ck. NQ 11/54 GB., M. 280, J. G. Brooks Bequest, 1976 (ANIC); 1♂, Watten Queensland F. H. Taylor (ANIC); 1♂, E.Q. (ANIC).

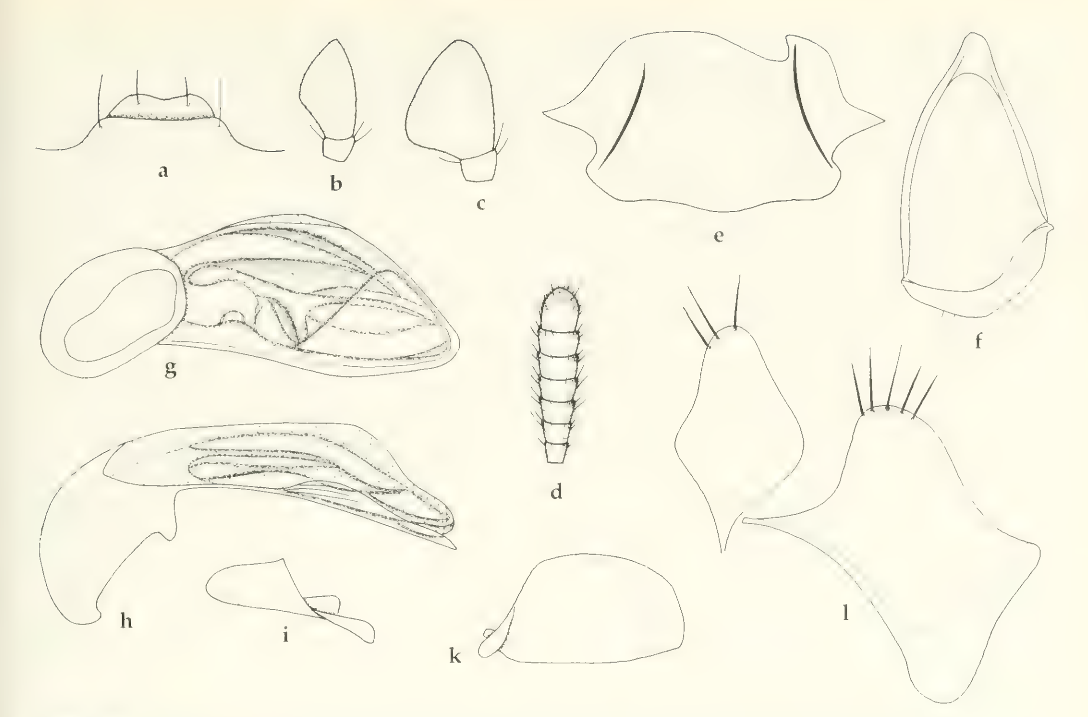
Diagnosis. Small to medium-sized, completely reddish species, distinguished by wide, moderately convex pronotum with comparatively wide apex, rather dense, usually rather coarse and rugose puncturation on pronotum, rather symmetric ♂ genital ring, short and moderately widened, on lower surface not striate aedeagus with shortly rounded apex and a distinct keel on upper surface, apically obliquely convex, strongly striate left paramere, and wide, apically strongly narrowed stylomere.

Description

Measurements. Length: 4.0-5.5 mm. Ratios. Width/length of pronotum: 1.52-1.60; width base/apex of pronotum: 1.36-1.41; width pronotum/head: 1.49-1.54; length/width of elytra: 1.49-1.57; length elytra/pronotum: 2.39-2.47.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody sometimes faintly darker.

Head (Figs 174a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes.



Figs 174a-l. *Adelotopus cribricollis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, superficial, puncturation fine, fairly dense. Surface with weak sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 362). Rather wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, rather irregularly bordered. Surface near base without or with very shallow transverse impression. Microreticulation much reduced, highly superficial, sometimes only faint traces visible, puncturation moderately fine to fairly coarse, especially laterally, dense, surface ususally with rather corase wrinkles, impilose, glossy.

Elytra (Figs 362, 513). Rather wide, moderately convex, slightly depressed on disk, rather parallel. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally 5 or 7 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine to fairly coarse, fairly dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, com-

pressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long or slightly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia fairly elongate to elongate, c. 5.5-6.5 × as long as wide, 1st tarsomere of metatarsus c. 2.2-2.5 × as long as wide.

♂ genitalia (Figs 174e-k). Genital ring rather wide, convex, slightly asymmetric, with rather short apex, with distincly asymmetric, rather small, fairly excised base. Sternum VII wide, apically evenly convex, with moderately deep excision, base gently bisinuate, in middle markedly convex, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus short, fairly depressed, in middle strongly widened, slightly asymmetric. Basal part rather long, moderately bent. Lower surface straight, not perceptibly striped. Upper surface about in middle with a distinct keel. Apex rather narrow, evenly rounded off, rather symmetric. Orifice rather elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, right slightly triangular, with widely rounded apex, left paramere considerably larger than right, square, apex conspicuously oblique.

♀ genitalia (Fig. 174l). Stylomere wide, more or less strongly narrowed to apex, apex rounded off, both lateral and median margins concave, with 2-3 elongate apical setae. Lateral plate elongate, with 2-6 elongate apical setae.

Variation. There is some variation of size, relative width of pronotum, size and desnsity of puncturation, rugosity of pronotum, length of legs and shape of stylomere.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. A specimen collected by me under bark of river gum. Dated specimens captured from November to January.

Distribution (Fig. 624). New South Wales, eastern Queensland.

Material examined (44). Apart from the type series a single, very small specimen is tentatively assigned to this species, because it has comparatively short legs and slightly differently shaped genital ring and aedeagus: 1♂, Australien, Coll. E. Witte (SMF).

Etymology. The name refers to the rugose surface of pronotum.

Adelotopus luteus, spec. nov.

Figs 175, 363, 514, 624

Types. Holotype: ♂, 15.39S 144.31E Split Rock QLD 18 Aug-16 Sep 1993 Flight Intercept Trap P. Zborowski & S. Shattuck (QMB T26060). – Paratypes: 1♀, same data (DPIM); 1♂, same locality, 18 Feb-25 Apr 1993 Malaise Trap P. Zborowski (DPIM); 1♀, same locality, 10 Oct-18 Nov 1993 Malaise Trap P. Zborowski & M. Horak (CBM).

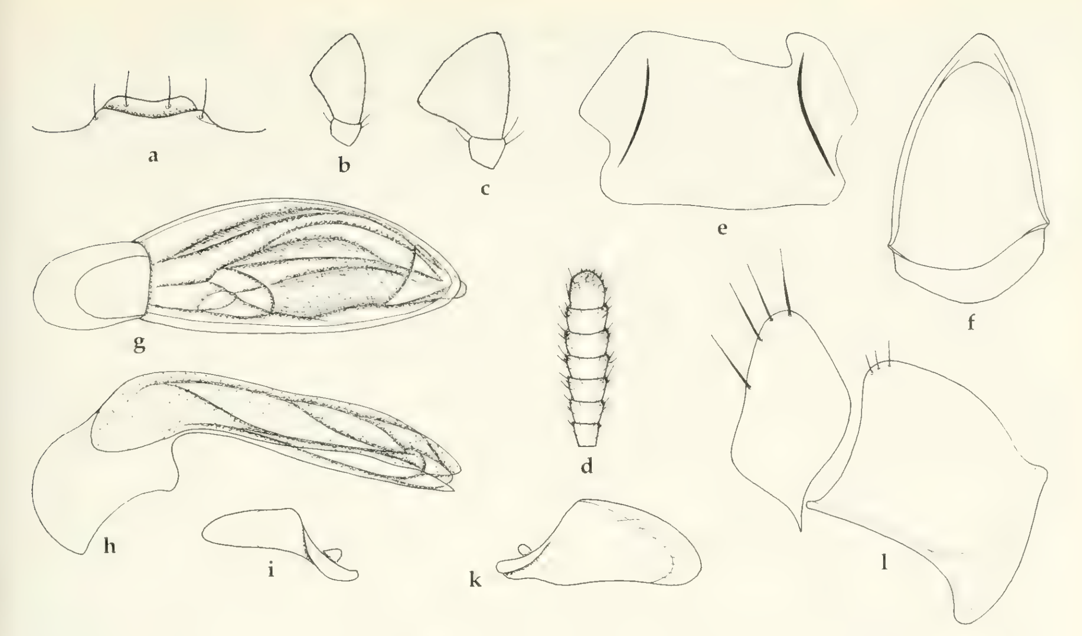
Diagnosis. Rather small, completely light reddish species, distinguished by the very wide, rather depressed pronotum with markedly wide, channeled lateral margins, very fine puncturation on pronotum and elytra, rather symmetric ♂ genital ring, short and moderately widened, symmetric, on lower surface not striate aedeagus with shortly rounded apex, and wide, markedly triangular stylomere. Further distinguished from most closely *A. houstoni*, spec. nov. by basally wider pronotum, distinctly shorter and wider antenna, even finer puncturation of surface, and shorter and basally much more concave lateral plate of ♀ stylomere.

Description

Measurements. Length: 4.85-4.95 mm. Ratios. Width/length of pronotum: 1.73-1.75; width base/apex of pronotum: 1.52-1.56; width pronotum/head: 1.67-1.70; length/width of elytra: c. 1.45; length elytra/pronotum: 2.45-2.52.

Colour. Upper and lower surface including mouth parts, antennae, and legs yellowish to light reddish, forebody faintly darker, tibiae and tarsi reddish-piceous.

Head (Figs 175a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short,



Figs 175a-l. *Adelotopus luteus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna short and apically distinctly widened, 8th-9th antennomeres >2 × as wide as long. Microreticulation very fine, superficial, puncturation extremely fine, difficult to see, rather sparse. Surface with weak sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 363). Very wide, rather depressed, base distinctly wider than apex, widest in apical third, strongly narrowed to apex. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, bordered. Sides regularly convex, moderately oblique, very wide, markedly chanelled, almost explanate, finely bordered. Basal angles very widely rounded off. Base faintly convex, distinctly bordered. Surface near base with very weak transverse impression. Microreticulation almost wanting, sometimes faintest traces visible, puncturation very fine, sparse, surface impilose, glossy.

Elytra (Figs 363, 514). Rather wide, fairly depressed, rather parallel. Lateral borders almost straight. Apex wide, slightly oblique, truncature faintly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally 5 rather spaced pores behind shoulder. Setae short. Striae including sutural stria absent. Microreticulation absent, puncturation very fine, sparse, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur shallow, anterior plate overlapping the groove only in apical fourth, border almost straight, posterior border of groove sharp. Femur moderately wide. Metatibia fairly elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.2 × as long as wide.

♂ genitalia (Figs 175e-k). Genital ring moderately wide, convex, slightly asymmetric, with short, obtuse apex, with asymmetric, rather small, little excised base. Sternum VII fairly wide, apically faintly oblique, with moderately deep excision, base almost straight, basal angles obtusely rounded, lateral parts rather short. Aedeagus short, fairly depressed, in middle rather widened, slightly asymmetric. Basal part rather long, moderately bent. Lower surface almost straight, not perceptibly striped. Apex narrow, obtusely angulate. Orifice elongate, internal sac complex, with a distinct oblique fold near apex. Both parameres large, rather elongate, with narrowly rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 175l). Stylomere wide, triangular, apex rounded off, with 3-4 elongate apical setae. Lateral plate rather short, with 3 rather short apical setae.

Variation. Very little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. All known specimens collected in "Flight intercept trap" and "Malaise Trap" during the periods of February-April, August-September, and October-November.

Distribution (Fig. 624). Base of Cape York Peninsula, northern Queensland. Known only from type locality.

Material examined (4). Only the type series.

Etymology. The name refers to the light colour.

Adelotopus houstoni, spec. nov.

Figs 176, 364, 515, 625

Types. Holotype: ♀, 11 km SSE of Banjiwarn HS (27°42'S 121°37'E) W. Aust. 22-28 Feb 1980 T. F. Houston et al. 316-18; Ex pitfall trap Western Australian Museum, Dept. of Biological Survey Site BWRI (WAM).

Diagnosis. Rather small, completely light reddish species, distinguished by the very wide, rather depressed pronotum with markedly wide, channeled lateral margins, fine puncturation on pronotum and elytra, and wide, markedly triangular stylomere. Further distinguished from most closely *A. luteus*, spec. nov. by basally narrower pronotum, distinctly longer and narrower antenna, slightly coarser puncturation of surface, and longer and basally far less concave lateral plate of ♀ stylomere.

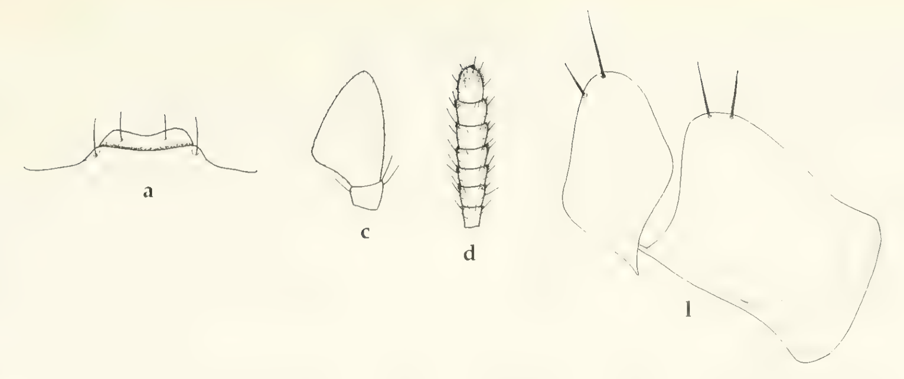
Description

Measurements. Length: 4.65 mm. Ratios. Width/length of pronotum: 1.75; width base/apex of pronotum: 1.42; width pronotum/head: 1.54; length/width of elytra: 1.48; length elytra/pronotum: 2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs yellowish to light reddish, forebody faintly darker.

Head (Figs 176a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Maxillary palpus lost. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, barely widened, 8th-9th antennomeres c. 1,5 × as wide as long. Microreticulation very fine, superficial, puncturation fine though distinct, moderately dense. Surface with weak sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 364). Very wide, rather depressed, base distinctly wider than apex, widest in apical third, moderately narrowed to apex. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, bordered. Sides regularly convex, moderately oblique, wide, chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, distinctly bordered. Surface near base with very weak



Figs 176a, c-d, l. *Adelotopus houstoni*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

transverse impression. Microreticulation absent, puncturation moderately fine, rather sparse, surface impilose, glossy.

Elytra (Figs 364, 515). Rather wide, fairly depressed, rather parallel. Lateral borders almost straight. Apex wide, slightly oblique, truncature faintly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining outer two fifth of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae short. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine, fairly sparse, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, moderately narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur shallow, anterior plate barely overlapping the groove, posterior border of groove sharp. Femur moderately wide. Metatibia elongate, c. 7 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide.

♂ genitalia. Unknown.

♀ genitalia (Fig. 176l). Stylomere wide, triangular, apex widely rounded off, with 2 elongate apical setae. Lateral plate moderately elongate, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined materal.

Habits. Largely unknown. Holotype collected "in pitfall trap" in February.

Distribution (Fig. 625). Central Western Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. Named in honour of the collector of the holotype.

Adelotopus virgatus, spec. nov.

Figs 51, 177, 365, 516, 625

Types. Holotype: ♂, Rushworth, V. J. C. le Souef, F. E. Wilson Collection, det. *aphodioides* (NMV). – Paratypes: 1♀, Adelaide Recu de W. Bates, *aphodioides* Westw. (MNHN); 1♂, Adelaide J. G. O. Tepper (SAMA); 1♂, Caldwell, N.S.W. 1.31 G. Goudie, J. C. Goudie Collection (NMV); 1♀, Morilla N.S.W. T.G.S. 31.12.26 (ANIC); 1♂, Australia: Lake Benanee N.S.W. 14.XII.72 B. P. Moore, *Adelotopus gyrinoides* Hope det. B. P. Moore '87 (CMC); 1♂, 3♀♀, Australia: Lake Benanee N.S.W. 14.XII.72 B. P. Moore, det. *gyrinoides* (CBM, CMC); 1♂, Australia, middle NSW Round Hill: near Lake Cargillego, No. 67, 11.II.1981 leg. Hangay & Vojnik (HNMB); 1♂, West. Riverina Australia Wait leg. Lüddemann ded. (DEIB); 7♂♂, 1♀, Australia: N. T.: Alice Springs 20-24.III.1971,

J. & M. Sedlacek Colls. BISHOP MUSEUM (BMH, CBM); 2♂♂, Australia: N. T.: Alice Springs 350-650 m 20-24.III.1968, N. L. H. Krauss Coll. BISHOP MUSEUM (BMH); 1♀, Simson, Nov. Holl. Queensl[d]., Fry Coll. 1905.100, det *rubiginosus* (BMNH); 1♂, Pascoe Coll. 93-60 (BMNH).

Diagnosis. Small to medium-sized, completely reddish species, distinguished by wide, moderately convex pronotum with moderately wide apex, rather dense, usually rather coarse puncturation on pronotum, symmetric ♂ genital ring, short and wide, asymmetric, on lower surface strongly striate aedeagus with obtuse apex, apically obliquely convex, strongly striate left paramere, and rather narrow, apically narrowed stylomere.

Description

Measurements. Length: 4.9-5.7 mm. Ratios. Width/length of pronotum: 1.62-1.68; width base/apex of pronotum: 1.36-1.48; width pronotum/head: 1.47-1.58; length/width of elytra: 1.46-1.58; length elytra/pronotum: 2.42-2.58.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody sometimes faintly darker.

Head (Figs 177a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, superficial, puncturation fine, fairly dense. Surface with weak sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

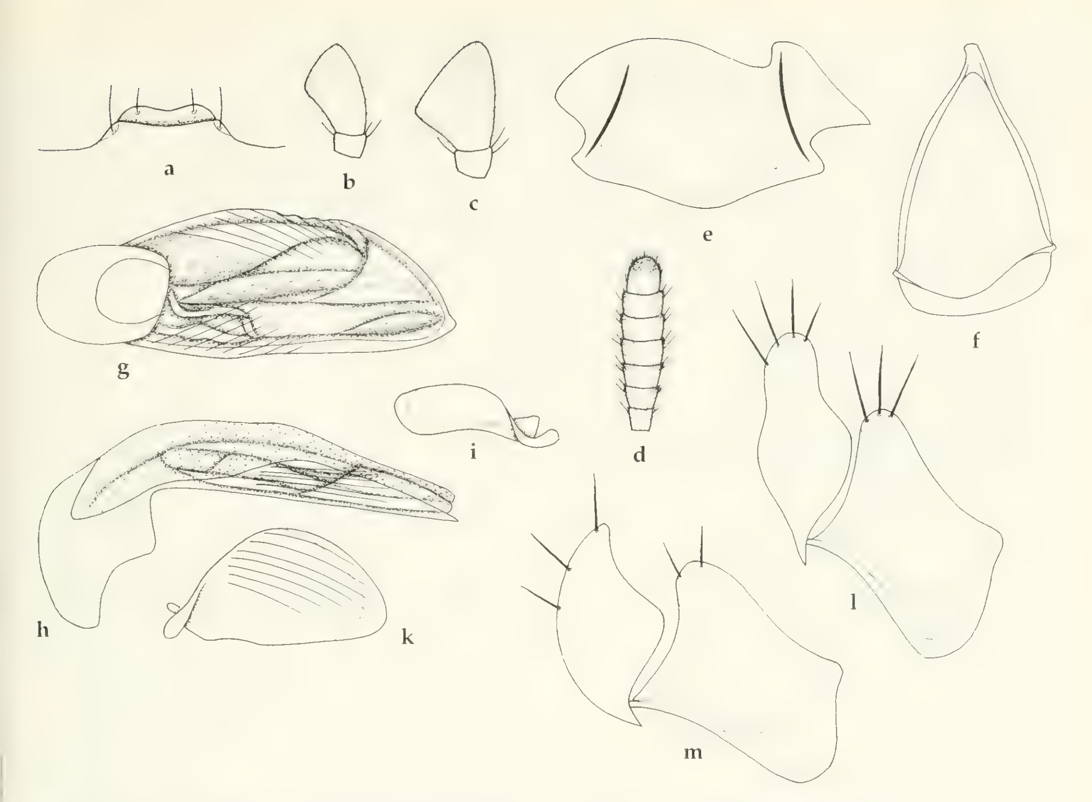
Pronotum (Fig. 365). Rather wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, rather irregularly bordered. Surface near base with shallow transverse impression. Microreticulation much reduced, highly superficial, sometimes only faint traces visible, puncturation fairly coarse, dense, surface rarely somewhat rugose, impilose, glossy.

Elytra (Figs 51, 365, 516). Rather wide, moderately convex, slightly depressed on disk, rather parallel. Lateral borders usually slightly convex. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining outer third of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally of 5 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately to fairly coarse, fairly dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long or slightly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 5.5-6 × as long as wide, 1st tarsomere of metatarsus c. 2.3 × as long as wide.

♂ genitalia (Figs 177e-k). Genital ring rather wide, rather triangular, barely asymmetric, with rather short apex, with slightly asymmetric, rather small, fairly excised base. Sternum VII wide, apically evenly convex, with moderately deep excision, base gently bisinuate, in middle markedly convex, basal angles obtusely rounded, lateral parts elongate. Aedeagus short, depressed, in middle strongly widened, markedly asymmetric, left side strongly convex, right almost straight. Basal part



Figs 177a-m. *Adelotopus virgatus*, spec. nov. Details of head and genitalia. For legends see fig. 100, m. ♀ stylomeres and lateral plate of untypical specimen.

rather long, markedly bent. Lower surface straight, markedly striped. Apex narrow, obtuse, asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather elongate, right rather elongate, with widely rounded apex, left paramere very large, triangular, apex obliquely rounded.

♀ genitalia (Figs 177l,m). Stylomere moderately narrow, more or less strongly narrowed to apex, apex rounded off, both lateral and median margins concave, with 2-4 elongate apical setae. Lateral plate elongate, with 2-3 elongate apical setae.

Variation. Some variation in shape of pronotum, density and degree of rugosity of pronotal puncturation, and shape of stylomere noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Unknown. Dated specimens captured from December to March.

Distribution (Fig. 625). South Australia, Victoria, western New South Wales, central Northern Territory.

Material examined (27). In addition to the type series there are some ♀ specimens doubtfully assigned to this species, mainly because of differences in the form of their stylomere (Fig. 177m): 1♀, Fundort ?, Coll. B. Schwarzer, det. *brunneus* (SMF); 1♀, Collect. Plason, N. H. (NHMW); 1♀, *rufescens* Chaud., Ex Musaeo Chaudoir (MNHN).

Etymology. The name refers to the strongly striped lower surface of the aedeagus.

Adelotopus brittoni, spec. nov.

Figs 178, 366, 517, 626

Types. Holotype: ♂, Wigley Waterhole, 5 miles N. of Alice Springs, NT. 16 Feb 1966 Britton, Upton & McInnes. *Adelotopus castaneus* Cast. E. B. Britton det. 1967 (ANIC).

Diagnosis. Medium-sized, completely reddish species, distinguished by wide, moderately convex pronotum with moderately wide apex, fine, rather sparse puncturation on pronotum and elytra, symmetric ♂ genital ring, short and wide, almost symmetric, on lower surface strongly striate aedeagus with acute apex, and apically convex, strongly striate left paramere.

Description

Measurements. Length: 5.8 mm. Ratios. Width/length of pronotum: 1.65; width base/apex of pronotum: 1.44; width pronotum/head: 1.65; length/width of elytra: 1.45; length elytra/pronotum: 2.43.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 178a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, 8th-9th antennomeres <1.5 × as wide as long. Microreticulation fine, superficial, puncturation very fine, fairly dense. Surface with weak sulcus medially of eyes, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

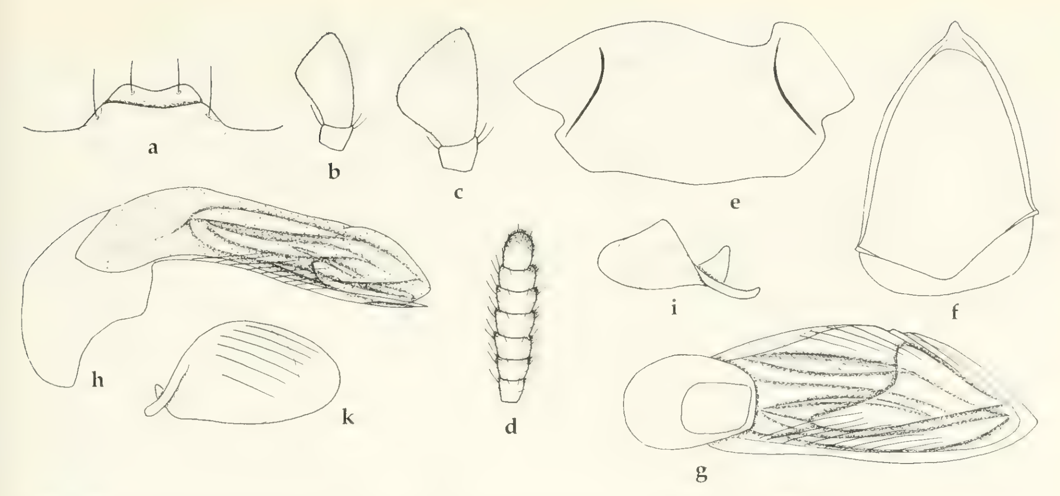
Pronotum (Fig. 366). Rather wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex acute, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, rather distinctly bordered. Surface near base with shallow transverse impression. Microreticulation much reduced, highly superficial, puncturation fine, rather sparse, surface impilose, highly glossy.

Elytra (Figs 366, 517). Rather wide, moderately convex, slightly depressed on disk, parallel. Lateral borders even faintly narrowed in basal half. Apex wide, slightly oblique, truncature faintrly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine, moderately sparse, surface impilose, very glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus slightly longer than wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6.5 × as long as wide, 1st tarsomere of metatarsus >2.5 × as long as wide.

♂ genitalia (Figs 178e-k). Genital ring rather wide, slightly convex, barely asymmetric, with rather short apex, with slightly asymmetric, rather small, fairly excised base. Sternum VII very wide, apically evenly convex, with moderately deep excision, base faintly bisinuate, in middle markedly convex, basal angles obtusely rounded, lateral parts elongate. Aedeagus short, depressed, in middle rather widened, slightly asymmetric. Basal part rather long, markedly bent. Lower surface straight to gently convex, slightly flattened near apex, markedly striped. Lateral border narrow. Apex narrow, acute,



Figs 178a-k. *Adelotopus brittoni*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather wide and triangular, at apex widely rounded off, left paramere considerably larger.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype collected in February.

Distribution (Fig. 626). Central Northern Territory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. Named in honour of the collector and famous coleopteran specialist E. B. Britton.

Adelotopus adustus, spec. nov.

Figs 179, 367, 518, 626

Types. Holotype: ♂, Champion Bay WAustr. Douboulay (OUM). – Paratypes: 2♀♀, same data (OUM); 1♂, Roebuck Bay, Roebuck Bay (Australia N.W.) Coll. Castelnau, det. *scolytides*, sp. affinissima all *hydrobioides* ma diff. per gli elitri punteggiati, n. sp. ?, *punctatus* Cast. (???), teste Gestro (MCSN); 1♂, West Australia, Ex Musaeo H. W. Bates 1892 (MNHN); 1♀, N. W. n. Holl., Janson Acq. 1884 (MNHN); 1♀, Du Boulay, Nov. Holl. Occi[d]., Fry Coll. 1905.100., det. *gyrinoides* (BMNH); 1♂, Ultima, V. G. Goudie (NMV); 1♀, Aust. (CBM).

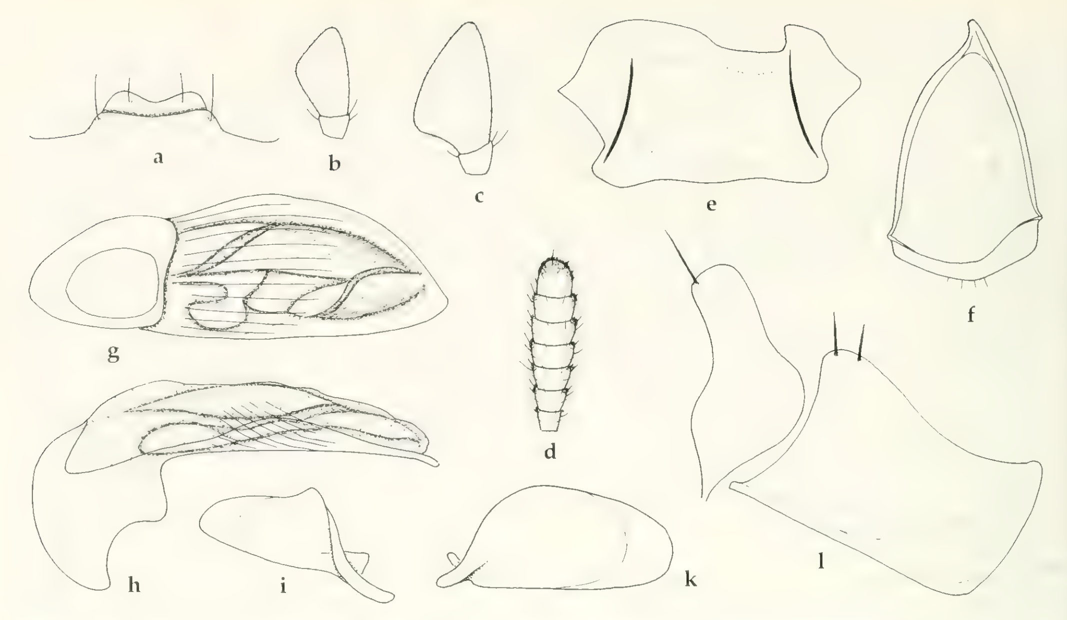
Diagnosis. Medium-sized, piceous species, distinguished by wide, moderately convex pronotum with moderately wide apex, coarse, dense puncturation on pronotum and elytra, symmetric ♂ genital ring, short and wide, asymmetric, on lower surface strongly striate aedeagus with rather acute apex, elongate, apically convex, strongly striate left paramere, and more or less triagonal stylomere with rather narrow apex.

Description

Measurements. Length: 5.9-6.8 mm. Ratios. Width/length of pronotum: 1.69-1.78; width base/apex of pronotum: 1.52-1.58; width pronotum/head: 1.65-1.70; length/width of elytra: 1.45-1.55; length elytra/pronotum: 2.43-2.56.

Colour. Upper surface more or less dark piceous, lower surface including mouth parts, antennae, and legs reddish-piceous.

Head (Figs 179a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex,



Figs 179a-l. *Adelotopus adustus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, more or less superficial, puncturation rather fine, fairly dense. Surface with weak sulcus medially of eyes, with some fine, irregular wrinkles, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 367). Wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides rather convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base faintly concave, distinctly bordered. Surface near base with shallow transverse impression. Microreticulation much reduced to almost absent, puncturation coarse, finer only in middle of apex, dense, surface with some irregular wrinkles, impilose, glossy.

Elytra (Figs 367, 518). Rather wide, moderately convex, slightly depressed on disk, rather parallel. Lateral borders usually slightly convex. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally of 5 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation usually fairly coarse, dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide.

♂ genitalia (Figs 179e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with short apex, with slightly asymmetric, small, fairly excised base. Sternum VII wide, apically oblique, slightly convex, with moderately deep excision, base gently bisinuate to almost straight, basal angles obtusely rounded, lateral parts elongate. Aedeagus short, depressed, in middle strongly widened, markedly asymmetric, left side strongly convex, right almost straight. Basal part rather long, markedly bent. Lower surface straight, markedly striped. Apex narrow, obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather elongate, right rather triangular, with obtusely rounded apex, left paramere very large, more square, with widely rounded apex.

♀ genitalia (Fig. 179l). Stylomere moderately wide, strongly narrowed to apex, apex parallel, rounded off, deeply concave at median border, with 1-2 elongate apical setae. Lateral plate elongate, with 2-3 elongate apical setae.

Variation. Generally little variation noted, though the single specimen from Victoria with denser and coarser puncturation on head, finer puncturation on elytra, less distinct microreticulation on forebody, and slightly narrower aedeagus. However, there is another single ♀ from south Western Australia that is but tentatively assigned to *A. adustus*, spec. nov., because it is plain reddish, pronotum and elytra are unusually finely and sparsely punctate, and the stylomere is rather short and wide.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. No specimen dated. This species is known only from very old material.

Distribution (Fig. 626). Western Australia, northwestern Victoria.

Material examined (10). The type series and an additional non-typical specimen: 1♀, Swan River. Janson Acq. 1894 (MNHN).

Etymology. The name refers to the brownish colour.

Adelotopus punctatissimus, spec. nov.

Figs 180, 368, 519

Types. Holotype: ♂, N. Terr. IV-71. J. Sedlacek Collector (QMB T26080).

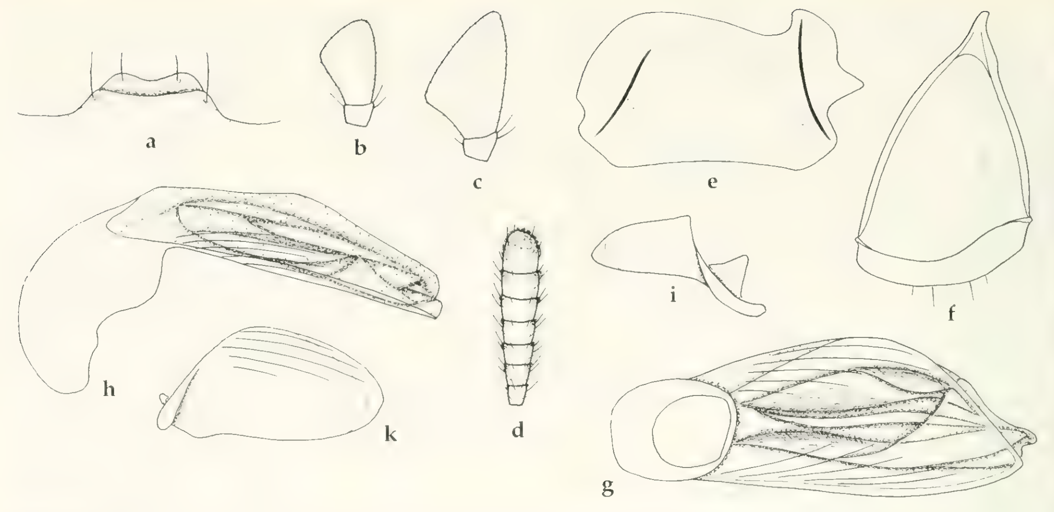
Diagnosis. Medium-sized, completely reddish species, distinguished by moderately wide, moderately convex pronotum with rather wide apex, very dense puncturation on pronotum and elytra, slightly asymmetric ♂ genital ring, short and wide, asymmetric, on lower surface strongly striate aedeagus with rather acute apex, elongate, apically obtuse, strongly striate left paramere.

Description

Measurements. Length: 5.6 mm. Ratios. Width/length of pronotum: 1.65; width base/apex of pronotum: 1.40; width pronotum/head: 1.52; length/width of elytra: 1.44; length elytra/pronotum: 2.51.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 180a-d). Rather short, fairly wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally rather projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture very depressed semicircular, only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex but faintly concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus moderately widened, fairly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather narrow and elongate, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation fine, moderately distinct, punctura-



Figs 180a-k. *Adelotopus punctatissimus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

tion fine fine, dense. Surface with weak sulcus medially of eyes, with some fine, longitudinal wrinkles, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 356). Moderately wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex acute, fairly oblique, almost attaining posterior third of eyes. Apex fairly excised, markedly convex in excision, feebly bordered. Sides gently convex, posteriorly almost parallel, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles rather widely rounded off. Base straight, irregularly bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation moderately fine, though very dense, surface with several irregular, rather coarse wrinkles, impilose, highly glossy.

Elytra (Figs 368, 519). Rather wide, moderately convex, slightly depressed on disk, parallel. Lateral borders even faintly narrowed in basal half. Apex wide, slightly oblique, truncature faintly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 7 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine, very dense, surface impilose, very glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex very short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for about apical third, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide.

♂ genitalia (Figs 180e-k). Genital ring rather wide, triangular, slightly asymmetric, with rather short apex, with slightly asymmetric, rather small, fairly excised base. Sternum VII wide, apically evenly convex, with moderately deep excision, base faintly excised, basal angles obtusely rounded, lateral parts rather short or short. Aedeagus short, depressed, wide, in middle markedly widened, rather asymmetric. Basal part very long, markedly bent. Lower surface straight, markedly striped. Lateral border narrow. Apex narrow, obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather wide and triangular, at apex obtusely rounded, left paramere considerably larger.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype colleted in April

Distribution. Northern Territory. Exact distribution unknown.

Material examined (1). Only the holotype.

Etymology. The name refers to the dense puncturation of the surface.

Adelotopus queenslandicus, spec. nov.

Figs 52, 181, 369, 520, 626

Types. Holotype: ♂, Australien, Qld 50, Calliope River 27 km se. Mt. Larcom 20.11.1990, M. Baehr (ANIC). – Paratypes: 17♂♂, 10♀♀, same data (CBM, ZSM); 1♀, Australien, Qld G44, 30 km n. Gympie 22.11.1990, leg. Gerstmeier (CBM); 5♂♂, 3♀♀, Australien, Qld 19, Burnett R., 10 km n. Eidsvold, 9.11.1990, M. Baehr (CBM); 1♂, Aus. Q. 15.XI.1986, 20 km N of Eidsvold. V. R. Bejsak, lgt. (CBS); 1♀, 12 km n. Taroom, s. Qld Austral. 17.12.1981, M. Baehr (CBM); 1♀, Australia: Q. Edungalba 19 (CSB); 2♂♂, 2♀♀, Australia: Qld Edungalba, 24.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 3♂♂, 1♀, Australia: Qld Rockhampton 26.XII.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 8♂♂, 8♀♀, Australia: Qld Rockhampton 26-27.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♂, 15 km s. Marlborough, ö. Qld Australien, 21.1.1982, M. Baehr (CBM); 1♀, Australia: Qld. HWy. 1, 51 mi. N. Marlborough, A. Michelbacher, XI-20-69, *Paussotropus parallelus* Waterhouse det. J. Liebherr 1972 (CUIC); 1♀, Australia, Qld 28 Isaac Riv., 171 km n. Dingo, Fitzroy Dev. Rd. 12.11.1990, M. Baehr (CBM); 1♂, 1755-4128, Bowen Queensland A. Simson (SAMA); 1♂, N. Holl. Q'land Bowen, Janson Acq. 1884 (MNHN); 1♀, Australia: Qld Charters Towers 29-30.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♀, Australia: Queensland 88 km E Charters Towers, 18.I.1964, J. Sedlacek Collector BISHOP MUSEUM (BMH); 1♂, 2♀♀, Australia: W. Paluma N.Q. 13.I.70, J. G. Brooks, det. *aphodioides* (CMC); 1♀, Australia, Qld 93/64, Einasleigh R. 2 km e. Einasleigh, 11.-12.6.1993, M. Baehr (CBM); 1♂, 3♀♀, Australia: Mt. Garnet N.Q. 8.XI.88 B. P. Moore (CMC); 2♀♀, Woodstock, NQ. 11.XI.1951 E. Sutton (QMB); 1♂, 1♀, *Castaneus* Cast. G. Queensland (ANIC); 2♂♂, Masters, Nov. Holl. Queensl[d]., Fry Coll. 1905.100., det. *rubiginosus* (BMNH); 4♀♀, 85, 85 *Adelotopus castaneus* Cast. Queensland (OUM); 1♂, 67, Australia W. Edwards, det. *punctatus* (MCZ); 1♂, 1♀, Sellheim 2/42, *Adelotopus castaneus* Castelnau [Series det. by A. Walford-Huggins] (CPM-WHC).

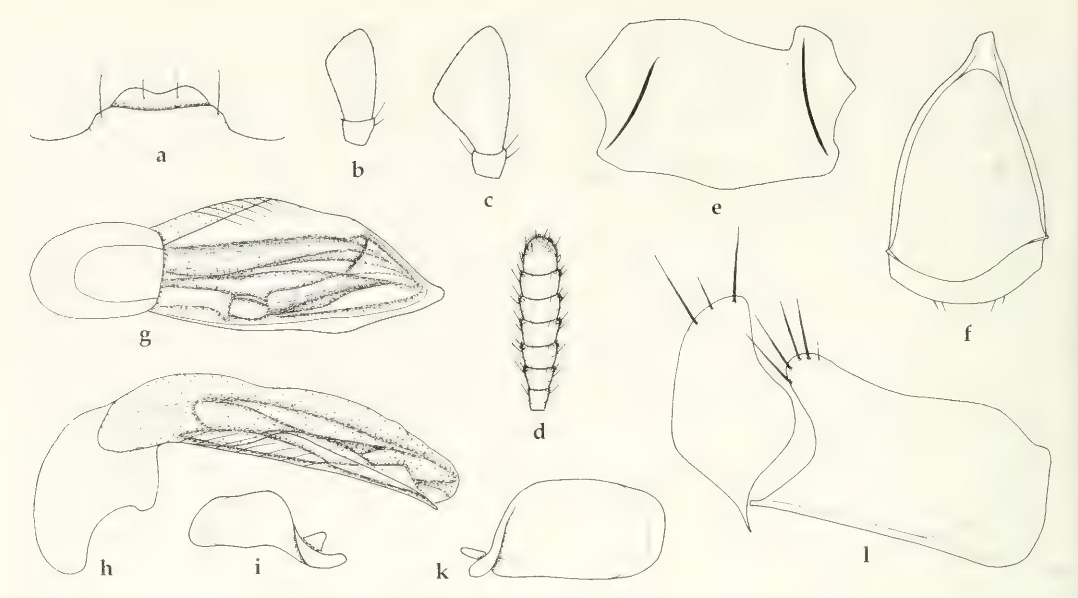
Diagnosis. Medium-sized, completely reddish species, distinguished by rather wide, moderately convex pronotum with rather narrow apex, dense and rather coarse puncturation on pronotum and elytra, barely asymmetric ♂ genital ring, slightly asymmetric, on lower surface only laterally somewhat striate aedeagus with rather acute apex, and characteristically bisinuate lateral borders, large apically transverse, barely striate left paramere, and on medial border evenly convex stylomere. Further distinguished from *A. aequus*, spec. nov. by absence of microreticulation on head, narrow maxillary palpus, rather short and wide antenna, and shape of aedeagus; from *A. palumae*, spec. nov. by narrower pronotum with slightly wider apex and shape of aedeagus; and from *A. angustatus*, spec. nov. by wider, less convex pronotum, shorter elytra, and medially convex stylomere.

Description

Measurements. Length: 4.1-5.3 mm. Ratios. Width/length of pronotum: 1.56-1.60; width base/apex of pronotum: 1.41-1.46; width pronotum/head: 1.52-1.58; length/width of elytra: 1.51-1.57; length elytra/pronotum: 2.41-2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody commonly slightly darker.

Head (Figs 181a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally faintly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus but faintly widened, not securiform. Terminal palpomere of labial palpus wide,



Figs 181a-l. *Adelotopus queenslandicus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

securiform. Antenna moderately elongate, in middle distinctly widened, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation rather fine, fairly dense. Surface with weak sulcus medially of eyes, with some fine, irregular wrinkles, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 359). Rather wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, convex in excision, faintly bordered. Sides rather convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, distinctly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately coarse, fairly dense, surface impilose, markedly glossy.

Elytra (Figs 52, 369, 520). Rather wide, moderately convex, slightly depressed on disk, rather parallel. Lateral borders usually slightly convex. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally 7 or 5 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation usually coarse, rather dense, surface impilose, markedly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9-2.0 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus as long as or slightly longer than wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide.

♂ genitalia (Figs 181e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with short apex, with slightly asymmetric, small, fairly excised base. Sternum VII wide, apically gently convex, with moderately deep excision, base gently convex to slightly triangular, basal angles obtusely rounded, lateral parts moderately elongate. Aedeagus rather short, depressed, in middle moderately

widened, slightly asymmetric, left side bisinuate, right more or less convex to straight. Basal part rather long, markedly bent. Lower surface straight, on left side striped. Apex narrow, obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather square, left very large with transversely cut apex.

♀ genitalia (Fig. 181l). Stylomere moderately wide, narrowed to apex, median border obliquely convex, apex with 2-4 elongate apical setae. Lateral plate elongate, with 3-6 elongate apical setae.

Variation. Apart from some differences in size and shape of pronotum lttle variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gums and other gum-type eucalypts, few specimens also at light. Dated specimens captured from November to February and in June, though the bulk of the specimens caught in November and December. In central eastern Queensland this species occurs in mixed colonies together with other *Adelotopus* species, e.g. *A. paroensis* Castelnau, *A. longus*, spec. nov., and *A. aequus*, spec. nov.

Distribution (Fig. 626). Eastern Queensland. Apparently most common in the central part around Rockhampton.

Material examined (92). Only the type series.

Etymology. The name refers to the range of this species.

Adelotopus aequus, spec. nov.

Figs 182, 370, 521, 627

Types. Holotype: ♂, Australien, Qld 26, Mackenzie R., 79 km n. Dingo, 11.-12.11.1990, M. Baehr (ANIC). – Paratypes: 1♂, Australien, Qld 50, Calliope River 27 km se. Mt. Larcom 20.11.1990, M. Baehr (CBM); 1♀, Australia, Qld Edungalba 8.1.1968 leg. G. Hangay (CBM); 1♂, 3♀♀, Australia: Qld Rockhampton 26.XII.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♀, Australien, Qld 27 Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd. 12.11.1990, M. Baehr (CBM); 1♀, Australien, Qld 37 Funnel Ck., Clermont-Marlborough-Rd. 17.-18.11.1990, M. Baehr (CBM); 1♂, 1♀, Port Denison, Port Denison Coll. Castelnau, det. *aphodioides* (MCSN) [marked "x", mounted together with 1 paratype of *A. palumae*, spec. nov. on same card]; ; 1♂, 1♀, Mt. Spec N.Q. 1/70 GB., Q. 754., *aphodioides* Westw. 1572., J. G. Brooks Bequest, 1976 (ANIC) [marked "x", mounted together with holotype and 5 paratypes of *A. palumae*, spec. nov. on same card]; 1♀, Hidden Valley, 2 M. N. X 14 M. W. Paluma, N.Q., 13.1.70, J. G. Brooks, "under bark" Q 754, *Adelotopus castaneus* Cast. E. B. Britton det. 1972 (ANIC) [marked "x", mounted together with 3 paratypes of *A. palumae*, spec. nov. on same card]; 1♀, N. Terr. 4-71, J. Sedlacek Collector (CSB); 1♀, Nov. Holl., bor. (NHRS).

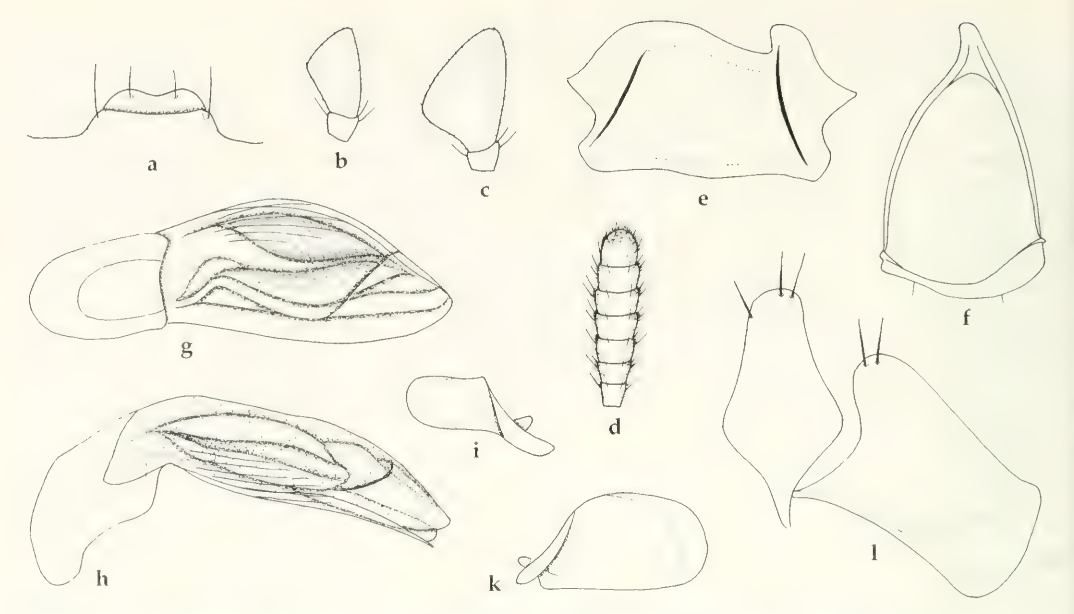
Diagnosis. Medium-sized, completely reddish species, distinguished by rather wide, moderately convex pronotum with rather wide apex, moderately coarse puncturation on pronotum, though coarse puncturation on elytra, distinctly asymmetric ♂ genital ring, asymmetric, on lower surface only laterally somewhat striate aedeagus with rather acute apex, large, apically convex, barely striate left paramere, and on medial border evenly convex stylomere. Further distinguished from *A. queenslandicus*, spec. nov. by wide maxillary palpus, rather elongate, not widened antenna, and shape of aedeagus; from *A. palumae*, spec. nov. by wide maxillary palpus, rather elongate, not widened antenna, and narrower pronotum with slightly wider apex; and from *A. angustatus*, spec. nov. by wider, less convex pronotum and shorter elytra; and from all three species by presence of microreticulation on head.

Description

Measurements. Length: 4.3-5.6 mm. Ratios. Width/length of pronotum: 1.47-1.58; width base/apex of pronotum: 1.35-1.39; width pronotum/head: 1.43-1.50; length/width of elytra: 1.51-1.60; length elytra/pronotum: 2.33-2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody usually distinctly darker.

Head (Figs 182a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally faintly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply



Figs 182a-l. *Adelotopus aequus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus fairly widened, slightly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna narrow and elongate, in middle not widened, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation present, though more or less superficial, puncturation very fine, fairly dense. Surface with weak sulcus medially of eyes, with some fine, irregular wrinkles, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 370). Rather wide, rather convex, base distinctly wider than apex, usually widest near base, though sometimes in basal part almost parallel. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, convex in excision, faintly bordered. Sides moderately convex, moderately oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, distinctly bordered. Surface near base with shallow transverse impression. Microreticulation almost absent, but sometimes faintest traces visible, puncturation rather fine to moderately coarse, fairly dense, surface impilose, rather glossy.

Elytra (Figs 370, 521). Rather wide, moderately convex, slightly depressed on disk, parallel. Lateral borders usually slightly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally 7 or 5 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation usually moderately coarse, rather dense, surface impilose, glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Elongate, 1st tarsomere of protarsus as long as or slightly longer than wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about

apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide.

♂ genitalia (Figs 182e-k). Genital ring moderately wide, rather triangular, fairly asymmetric, with short apex, with slightly asymmetric, very small, barely excised base. Sternum VII wide, apically gently convex, with moderately deep excision, base gently bisinuate, basal angles obtusely rounded, lateral parts elongate. Aedeagus rather short, depressed, in middle moderately markedly widened, asymmetric, left side straight, right convex. Basal part rather long, markedly bent. Lower surface almost straight, on left side striped. Apex narrow, obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather square with widely rounded apex, left considerably larger than right.

♀ genitalia (Fig. 182l). Stylomere moderately wide, narrowed to apex, median border slightly concave, apex with 2-3 elongate apical setae. Lateral plate elongate, with 2-4 elongate apical setae.

Variation. Rather variable species with regard to size, shape and relative width of pronotum, density and size of puncturation, and shape of stylomere.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of river gums, another specimen caught "under bark". Dated specimens captured from November to January and perhaps in April.

Distribution (Fig. 627). Central eastern and northeastern Queensland north to about Townsville, ? Northern Territory. The last record is due to a single specimen labelled only "N. Terr." that may be mislabelled.

Material examined (16). Only the type series.

Etymology. The name refers to the high similarity of this species with *A. queenslandicus*, spec. nov. and *A. palumae*, spec. nov.

Adelotopus palumae, spec. nov.

Figs 183, 371, 522, 628

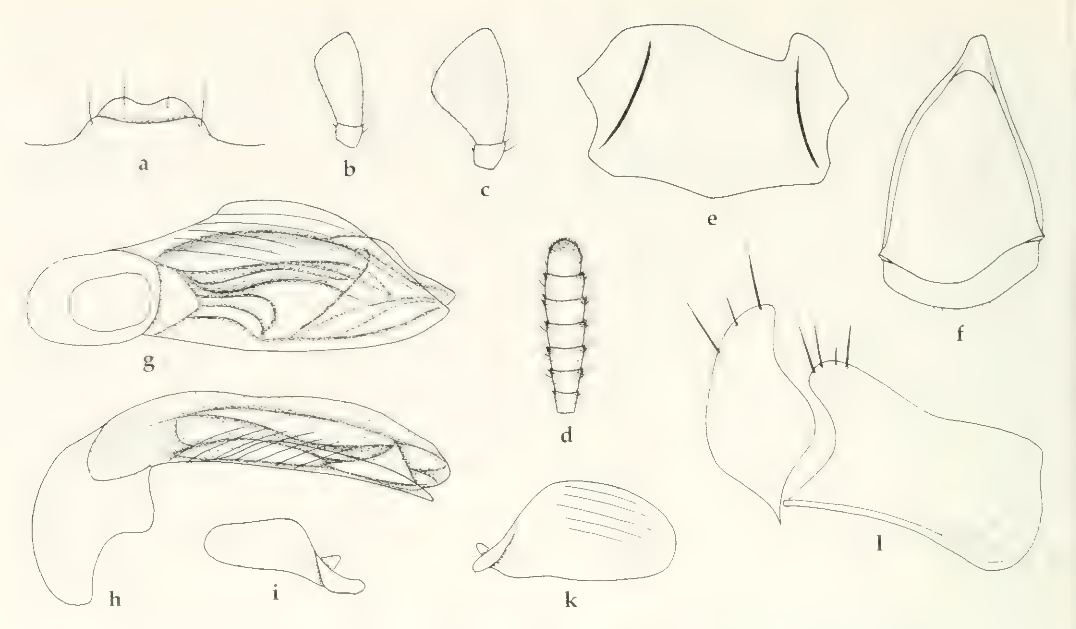
Types. Holotype: ♂, Mt. Spec N.Q. 1/70 GB., Q. 754., *aphodioides* Westw. 1572., J. G. Brooks Bequest, 1976 (ANIC) [holotype, marked "HT.", mounted together with 5 additional specimens of this species and 2 specimens of *A. aequus*, spec. nov. on same card, the latter marked "x"]. – Paratypes: 4♂♂, 1♀, same data (ANIC); 2♂♂, 1♀, Hidden Valley, 2 M. N. X 14 M. W. Paluma, N.Q., 13.1.70, J. G. Brooks, 629 (BMNH); 3♂♂, 1♀, Hidden Valley, 2 M. N. X 14 M. W. Paluma, N.Q., 13.1.70, J. G. Brooks, "under bark" Q 754, *Adelotopus castaneus* Cast. E. B. Britton det. 1972 (ANIC) [mounted together with 1 paratype of *A. aequus*, spec. nov. on same card, the latter marked "x"]; 1♂, Running River 14 mi W of Paluma QLD. 13 Jan.1970 J. G. Brooks, J. G. Brooks Bequest, 1976 (CBM); 1♂, Port Denison, Port Denison Coll. Castelnau, det. *aphodioides* (MCSN) [mounted together with 2 paratypes of *A. aequus*, spec. nov. on same card, the latter marked "x"].

Diagnosis. Medium-sized, completely reddish species, distinguished by rather wide, moderately convex pronotum with rather narrow apex, dense and rather coarse puncturation on pronotum and elytra, slightly asymmetric ♂ genital ring, asymmetric, on lower surface only laterally somewhat striate aedeagus with rather acute apex, large, apically convex, barely striate left paramere, and on medial border evenly convex stylomere. Further distinguished from *A. queenslandicus*, spec. nov. by wider, at apex narrower pronotum and shape of aedeagus; from *A. aequus*, spec. nov. by absence of microreticulation on head, narrow maxillary palpus, rather short and slightly widened antenna, and apically narrow pronotum; from *A. angustatus*, spec. nov. by wider, less convex pronotum, shorter elytra, and medially convex stylomere; and from all three species by faintly darker apex of elytra.

Description

Measurements. Length: 4.45-5.15 mm. Ratios. Width/length of pronotum: 1.55-1.62; width base/apex of pronotum: 1.47-1.53; width pronotum/head: 1.59-1.66; length/width of elytra: 1.48-1.54; length elytra/pronotum: 2.35-2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, forebody and apex of elytra faintly darker.



Figs 183a-l. *Adelotopus palumae,* spec. nov. Details of head and genitalia. For legends see fig. 100.

Head (Figs 183a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally faintly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus barely widened, not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna moderately elongate, in middle distinctly widened, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation rather fine, fairly dense. Surface with weak sulcus medially of eyes, with some fine, irregular wrinkles, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 371). Wide, rather convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, convex in excision, faintly bordered. Sides convex, rather oblique. Margins rather wide, moderately chanelled, finely bordered. Basal angles widely rounded off. Base straight or faintly concave, not or irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately coarse, dense, surface impilose, glossy.

Elytra (Figs 371, 522). Rather wide, moderately convex, slightly depressed on disk, parallel. Lateral borders usually slightly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6, rarely unilaterally 7 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately coarse, rather dense, surface impilose, glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.3-2.5 × as long as wide.

♂ genitalia (Figs 183e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with short apex, with slightly asymmetric, small, slightly excised base. Sternum VII wide, apically gently convex, with moderately deep excision, base gently bisinuate to slightly convex, basal angles obtusely rounded, lateral parts rather elongate. Aedeagus rather short, depressed, in middle markedly widened, asymmetric, left side straight or faintly concave, right convex. Basal part rather long, markedly bent. Lower surface almost straight, on left side striped. Apex narrow, acute to slightly obtuse, slightly asymmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres rather square with widely rounded apex, left considerably larger than right.

♀ genitalia (Fig. 183l). Stylomere rather wide, median border convex, apex with 2-3 elongate apical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. Little variation only noted in shape of pronotum and elytra and shape of stylomere.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Some specimens collected "under bark". All dated specimens captured on same day in January.

Distribution (Fig. 628). Paluma Range and vicinity, northeastern Queensland.

Material examined (15). Only the type series.

Etymology. The name refers to the type locality of this species, Paluma Range.

Adelotopus angustatus, spec nov.

Figs 53, 184, 372, 523, 628

Types. Holotype: 1♀, Australien, Qld 23, Callide Ck. 22 km nnw. Biloela, 11.11.1990, M. Baehr (ANIC).

Diagnosis. Medium-sized, completely reddish species, distinguished by rather narrow, rather convex pronotum with rather narrow apex, elongate elytra, and narrow and rather parallel stylomere. Further distinguished from *A. queenslandicus*, spec. nov., *A. aequus*, spec. nov., and *A. palumae*, spec. nov. by narrower, more convex pronotum and longer elytra.

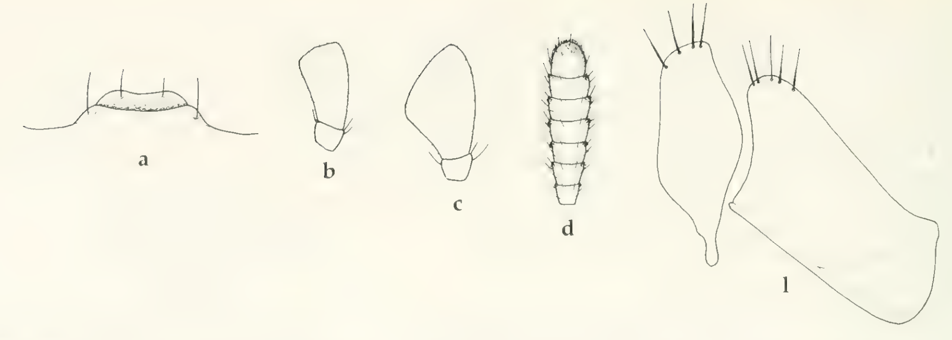
Description

Measurements. Length: 5.6 mm. Ratios. Width/length of pronotum: 1.47; width base/apex of pronotum: 1.43; width pronotum/head: 1.55; length/width of elytra: 1.65; length elytra/pronotum: 2.41.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 184a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally faintly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus slightly widened, barely securiform. Terminal palpomere of labial palpus wide, securiform. Antenna fairly elongate, in middle slightly widened, 8th-9th antennomeres c. 1.7 × as wide as long. Microreticulation absent, puncturation rather fine, fairly dense. Surface with weak sulcus medially of eyes, with some fine, irregular wrinkles, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 372). Moderately wide, highly convex, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, convex in excision, faintly bordered. Sides fairly convex, moderately oblique. Margins moderately wide, narrowly chanelled, finely bordered. Basal angles widely rounded



Figs 184a-d, l. *Adelotopus angustatus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

off. Base straight, rather finely bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation rather fine, fairly dense, surface impilose, highly glossy.

Elytra (Figs 53, 372, 523). Moderately wide, elongate, rather convex, slightly depressed on disk, parallel. Lateral borders almost straight. Apex wide, slightly oblique, truncature gently convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately coarse, rather dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.4 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 184l). Stylomere rather narrow and parallel, median border almost straight, apex with 3-4 elongate apical setae. Lateral plate very elongate, with 4-5 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Holotype collected by me under bark of river gum in November.

Distribution (Fig. 628). Central Queensland. Known only from type locality.

Material examined (1). Only the holotype.

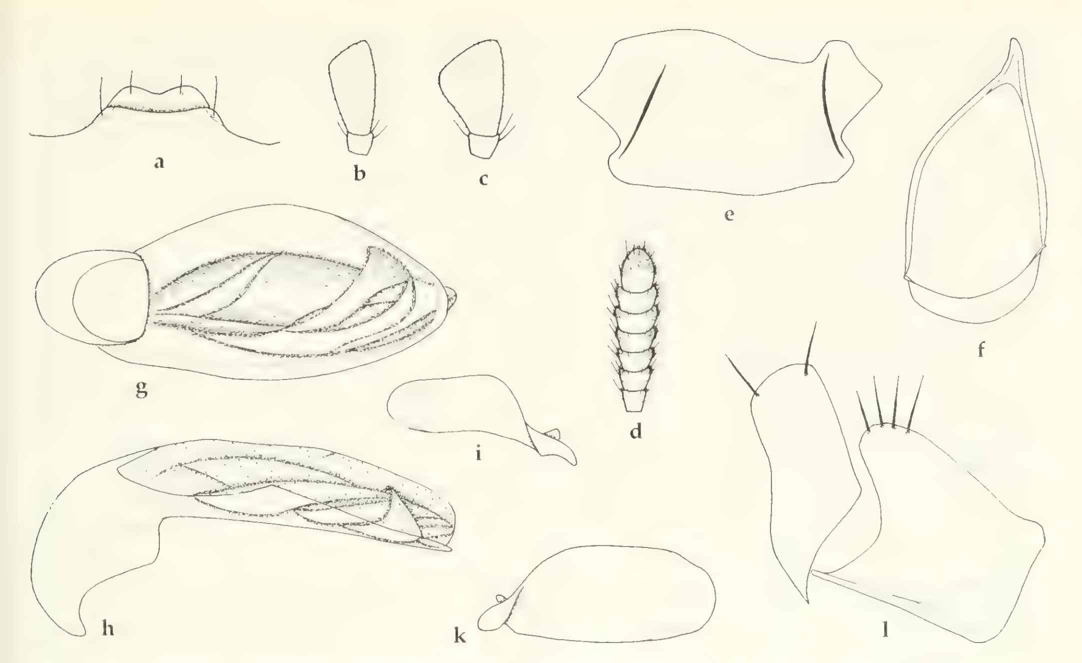
Etymology. The name refers to the comparatively narrow and elongate shape.

Adelotopus flavescens, spec. nov.

Figs 185, 373, 524, 628

Types. Holotype: ♂, Kerrisdale 7.1.24 (NMV). – Paratypes: 1♂, Cunnamulla, Q. H. Hardcastle (SAMA); 1♀, Hambidge Mallee SA, Austral. 12.1972 M. Baehr (CBM).

Diagnosis. Small, completely yellowish to light reddish species, distinguished by rather narrow, convex pronotum with rather wide apex and narrow lateral margins, absence of microreticulation even on head, rather coarse puncturation on pronotum, coarse puncturation on elytra, basally parallel, asymmetric ♂ genital ring with elongate apex, wide, almost symmetric, on lower surface not striate



Figs 185a-l. *Adelotopus flavescens*, spec. nov. Details of head and genitalia. For legends see fig. 100.

aedeagus with widely rounded apex, elongate, apically rounded, not striate left paramere, almost parallel stylomere, and markedly short lateral plate.

Description

Measurements. Length: 3.9-4.3 mm. Ratios. Width/length of pronotum: 1.44-1.50; width base/apex of pronotum: 1.38-1.41; width pronotum/head: 1.50-1.52; length/width of elytra: 1.52-1.55; length elytra/pronotum: 2.29-2.34.

Colour. Upper and lower surface including mouth parts, antennae, and legs light reddish.

Head (Figs 185a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus slightly widened, barely securiform. Terminal palpomere of labial palpus rather wide, securiform. Antenna moderately elongate, in middle distinctly widened, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation moderately fine to fairly coarse, rather dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 373). Moderately wide, rather highly convex, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex obtuse, fairly oblique, just surpassing posterior border of eyes. Apex fairly excised, very convex in excision, faintly and irregularly bordered. Sides moderately convex, fairly oblique. Margins rather narrow, narrowly chanelled, finely bordered. Basal angles widely rounded off. Base straight to slightly convex, irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately fine to fairly coarse, rather dense, surface impilose, highly glossy.

Elytra (Figs 373, 524). Moderately wide, convex, comparatively short, faintly depressed on disk, parallel. Lateral borders slightly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without

setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather coarse and dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, rather narrow, compressed, passing over almost continuously from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 5.5 × as long as wide, 1st tarsomere of metatarsus c. 2.2-2.3 × as long as wide.

♂ genitalia (Figs 185e-k). Genital ring moderately wide, basally almost parallel, asymmetric, with rather elongate apex, with asymmetric, small, slightly excised base. Sternum VII wide, apically obliquely convex, with rather shallow excision, base slightly convex, basal angles obtusely rounded, lateral parts rather elongate. Aedeagus very short, depressed, in middle strongly widened, barely asymmetric, both sides gently convex. Basal part rather long, bent. Lower surface almost straight, not striped. Apex wide, widely rounded off, symmetric. Orifice rather elongate, internal sac complex, with a small oblique fold near apex. Both parameres elongate, square, with widely rounded apex, left considerably larger than right, not striped.

♀ genitalia (Fig. 185l). Stylomere moderately wide, rather parallel, median border faintly sinuate, apex with 2 elongate apical setae. Lateral plate short, with 3-4 elongate apical setae.

Variation. Some variation noted in size of puncturation on head and pronotum, and in shape of ♂ genital ring and aedeagus.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of a mallee eucalypt. Dated specimens collected in December and January.

Distribution (Fig. 628). Eyre Peninsula in South Australia, northern Victoria, southwestern Queensland. Known only from a single locality in each state.

Material examined (3). Only the type series.

Etymology. The name refers to the yellowish colour.

Adelotopus grossepunctatus, spec. nov.

Figs 186, 374, 525, 628

Types. Holotype: ♂, Onslow W.A., Nat. Mus. Victoria – C. French's Coll. 6.1.08, det. *aphodioides* (NMV).

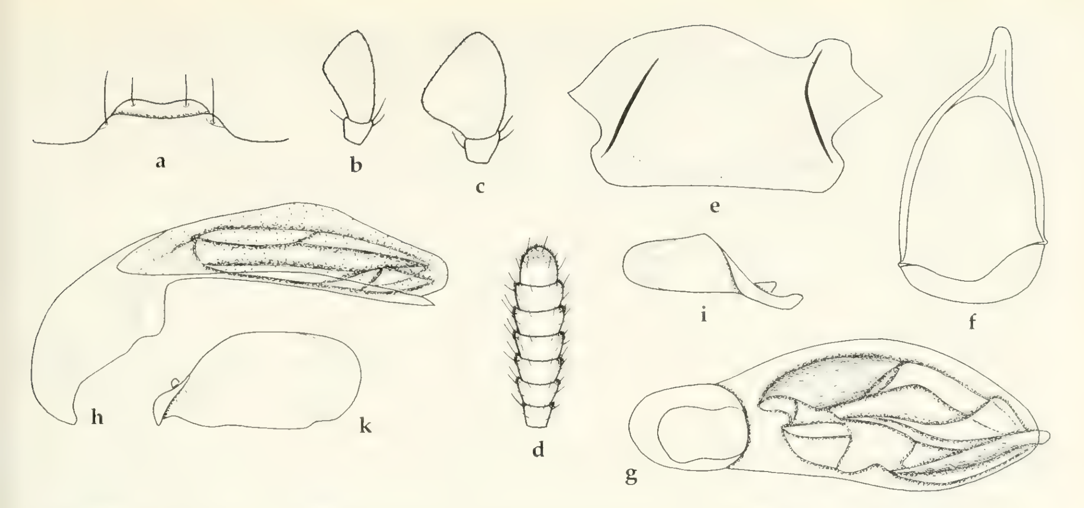
Diagnosis. Medium-sized, completely reddish species, distinguished by rather narrow, highly convex pronotum with rather wide apex and narrow lateral margins, absence of microreticulation even on head, convex elytra with markedly coarse, dense puncturation, slightly convex ♂ genital ring with elongate apex, fairly wide, almost symmetric, on lower surface not striate aedeagus with shortly rounded apex, and elongate, apically rounded, not striate left paramere.

Description

Measurements. Length: 5.0 mm. Ratios. Width/length of pronotum: 1.47; width base/apex of pronotum: 1.44; width pronotum/head: 1.49; length/width of elytra: c. 1.57; length elytra/pronotum: 2.36.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 186a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex



Figs 186a-k. *Adelotopus grossepunctatus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus slightly widened, barely securiform. Terminal palpomere of labial palpus wide, securiform. Antenna moderately elongate, in middle distinctly widened, 8th-9th antennomeres c. 1.9-2 × as wide as long. Microreticulation absent, puncturation moderately fine, rather dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 374). Moderately wide, highly convex, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, very convex in excision, faintly and irregularly bordered. Sides moderately convex, fairly oblique. Margins narrow, narrowly chanelled, finely bordered. Basal angles widely rounded off. Base faintly concave, finely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately fine, latereally fairly coarse, rather dense, surface impilose, highly glossy.

Elytra (Figs 374, 525). Moderately wide, highly convex, comparatively short, faintly depressed on disk, parallel. Lateral borders slightly excised in basal third. Apex wide, slightly oblique, truncature gently convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, mostly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation remarkably coarse, rather dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, rather narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.4 × as long as wide.

♂ genitalia (Figs 186e-k). Genital ring moderately wide, slightly convex, fairly asymmetric, with rather elongate apex, with asymmetric, small, rather excised base. Sternum VII wide, apically obliquely convex, with shallow excision, base almost straight, basal angles obtusely rounded, lateral parts elongate. Aedeagus rather short, depressed, in middle fairly widened, slightly asymmetric, both sides gently convex. Basal part rather long, rather bent. Lower surface almost straight, not striped. Apex

moderately narrow, shortly rounded off, symmetric. Orifice rather elongate, internal sac complex, with a small oblique fold near apex. Both parameres elongate, square, with widely rounded apex, left considerably larger than right, not striped.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype not dated.

Distribution (Fig. 628). Northwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the very coarse puncturation of the elytra.

Adelotopus ooldeae, spec. nov.

Figs 187, 375, 526, 628

Types. Holotype: ♀, Ooldea, S.A. A. M. Lea, *A. aphodioides* Westw. S. Australia (SAMA).

Diagnosis. Medium-sized, completely reddish species, distinguished by rather narrow, highly convex pronotum with rather narrow apex, narrow lateral margins, absence of microreticulation even on head, convex elytra, rather fine and sparse puncturation on pronotum and elytra, and boomerang-shaped stylomere.

Description

Measurements. Length: 5.4 mm. Ratios. Width/length of pronotum: 1.55; width base/apex of pronotum: 1.50; width pronotum/head: 1.56; length/width of elytra: c. 1.64; length elytra/pronotum: 2.53.

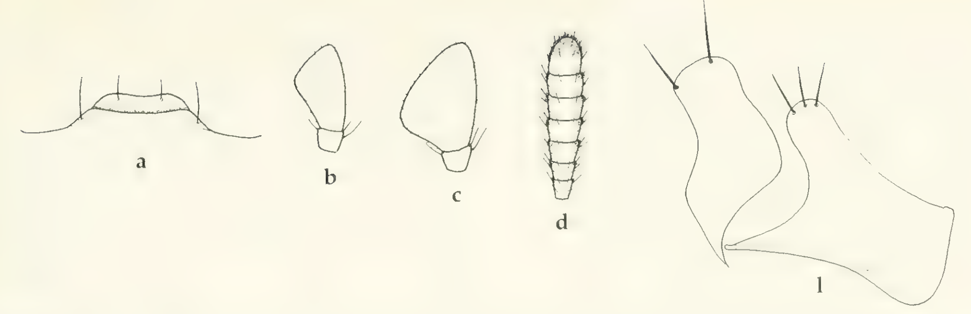
Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 187a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus slightly widened, barely securiform. Terminal palpomere of labial palpus wide, securiform. Antenna rather elongate, in middle barely widened, 8th-9th antennomeres c. 1.7 × as wide as long. Microreticulation absent, puncturation rather fine, moderately dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 375). Moderately wide, rather highly convex, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex obtuse, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, very convex in excision, distinctly bordered. Sides moderately convex, rather oblique. Margins rather narrow, narrowly chanelled, finely bordered. Basal angles widely rounded off. Base almost straight, distinctly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation rather fine, fairly sparse, surface impilose, highly glossy.

Elytra (Figs 375, 526). Moderately wide, highly convex, comparatively elongate, faintly depressed on disk, parallel. Lateral borders slightly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, mostly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine and fairly sparse, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, rather narrow,



Figs 187a-d, l. *Adelotopus ooldeae*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 187l). Stylomere moderately wide, characteristically boomerang-shaped, median border deeply sinuate, apex with 2 elongate apical setae. Lateral plate moderately elongate, with 3-4 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype not dated.

Distribution (Fig. 628). Western South Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the type locality.

Adelotopus crucis, spec. nov.

Figs 188, 376, 527, 627

Types. Holotype: ♂, W.AUSTRALIA: Southern Cross. 10-22.i.1936. R. E. Turner. B.M.1936-28. (BMNH). – Paratype: 1♀, same data (CBM).

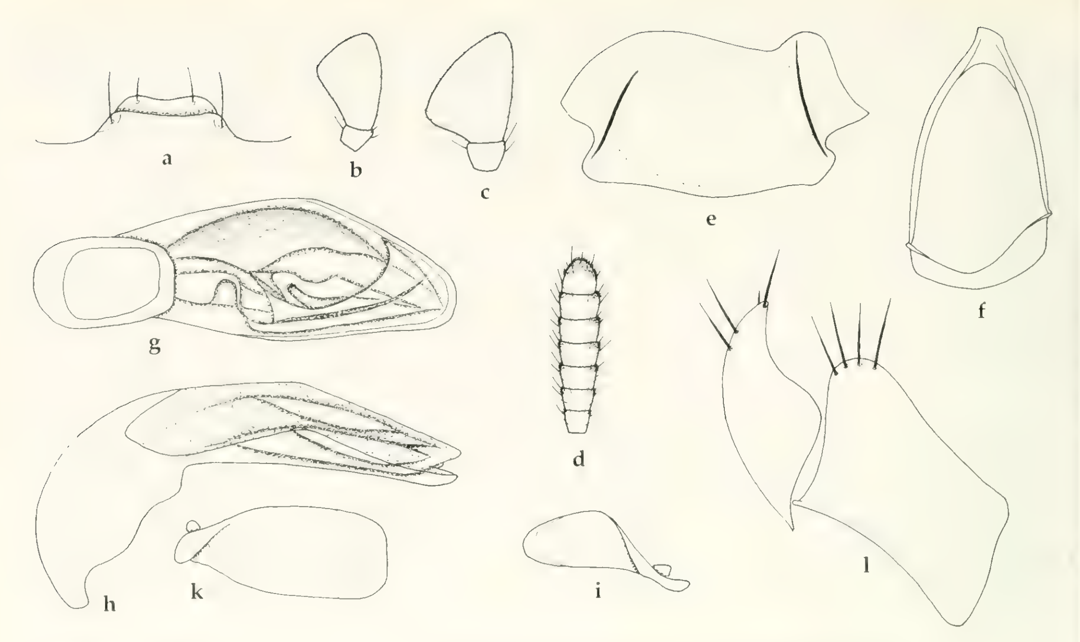
Diagnosis. Medium-sized, completely reddish species, distinguished by fairly wide, moderately convex pronotum with rather narrow apex and fairly wide lateral margins, absence of microreticulation even on head, fairly wide elytra with coarse, fairly dense puncturation, rather symmetric ♂ genital ring with short apex, moderately wide, rather elongate, almost symmetric, on lower surface not striate aedeagus with wide, widely rounded apex, elongate, apically square, not striate left paramere, and apically anarrowly obtuse, on median margin evenly convex, somewhat falciform stylomere.

Description

Measurements. Length: 5.5 mm. Ratios. Width/length of pronotum: 1.52-1.57; width base/apex of pronotum: 1.49-1.50; width pronotum/head: 1.58-1.62; length/width of elytra: 1.49-1.50; length elytra/pronotum: 2.35-2.36.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 188a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally barely projecting, lateral borders barely narrowed behind eyes. Clypeal



Figs 188a-l. *Adelotopus crucis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus rather widened, distinctly securiform. Terminal palpomere of labial palpus extremely wide, markedly securiform. Antenna moderately elongate, in middle faintly widened, 8th-9th antennomeres c. 1.6 × as wide as long. Microreticulation absent, puncturation moderately fine, rather dense. Surface with weak sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 376). Rather wide, moderately convex, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex very obtuse, fairly oblique, just surpassing posterior border of eyes. Apex fairly excised, very convex in excision, faintly and irregularly bordered. Sides rather convex, fairly oblique. Margins moderately wide, fairly chanelled, finely bordered. Basal angles widely rounded off. Base straight to slightly convex, irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation moderately fine to fairly coarse, rather dense to dense, surface impilose, highly glossy.

Elytra (Figs 376, 527). Fairly wide, moderately convex, comparatively short, slightly depressed on disk, rather parallel. Lateral borders faintly excised in basal third. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather coarse and dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, narrow, convex, apex short, rather narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.7-1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather

shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.4 × as long as wide.

♂ genitalia (Figs 188e-k). Genital ring moderately wide, basally almost parallel, faintly asymmetric, with rather short apex, with asymmetric, small, slightly excised base. Sternum VII wide, apically gently convex, with shallow excision, base slightly convex, basal angles obtusely rounded, lateral parts rather elongate. Aedeagus moderately short, depressed, in middle moderately widened, barely asymmetric. Basal part rather long, not much bent. Lower surface almost straight, not striped. Apex wide, widely rounded off, symmetric. Orifice rather elongate, internal sac complex, with a large oblique fold near apex. Both parameres elongate, right with widely rounded apex, left considerably larger than right, square, with transverse apex, not striped.

♀ genitalia (Fig. 188l). Stylomere moderately wide, rather falciform, strongly narrowed towards apex, median border strongly and evenly convex, apex narrowly obtuse, with 3-4 elongate apical setae. Lateral plate rather elongate, with 4-5 elongate apical setae.

Variation. Little variation noted in size and density of puncturation of head and pronotum.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Both specimens collected in January.

Distribution (Fig. 627). Interior of southwestern Australia. Known only from type locality.

Material examined (2). Only the holotype and one paratype.

Etymology. The name refers to the type locality, Southern Cross.

Adelotopus crassus, spec. nov.

Figs 189, 377, 528, 627

Types. Holotype: ♀, Nicol Bay, Ex Musaeo H. W. Bates 1892 (MNHN).

Diagnosis. Rather large, wide, fairly depressed, completely reddish species, distinguished by wide pronotum with narrow apex and fairly wide lateral margins, presence of microreticulation on head and on pronotum, wide elytra with comparatively fine, irregular, fairly dense puncturation, and narrow, at apex rounded, on median margin slightly convex stylomere.

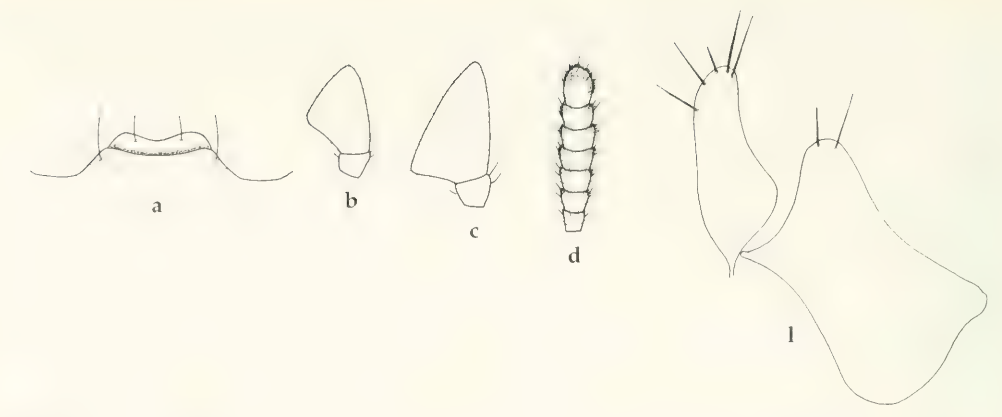
Description

Measurements. Length: 6.65 mm. Ratios. Width/length of pronotum: 1.71; width base/apex of pronotum: 1.60; width pronotum/head: 1.73; length/width of elytra: 1.46; length elytra/pronotum: 2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish.

Head (Figs 189a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 12 elongate setae. Terminal palpomere of maxillary palpus rather widened, distinctly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna moderately elongate, in middle barely widened, 8th-9th antennomeres c. 1.6 × as wide as long. Microreticulation present, fine, puncturation very fine, moderately dense. Surface with weak sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 377). Wide, moderately convex, base much wider than apex, widest near base. Apical angles rather produced, at apex rather acute, fairly oblique, attaining posterior third of eyes. Apex fairly excised, convex in excision, faintly and irregularly bordered. Sides rather convex, oblique. Margins rather wide, rather widely chanelled, finely bordered. Basal angles widely rounded off. Base slightly convex, irregularly bordered. Surface near base with shallow transverse impression. Microre-



Figs 189a-d, l. *Adelotopus crassus*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

ticulation almost absent, though faint traces visible, puncturation moderately fine, fairly dense, surface impilose, glossy.

Elytra (Figs 377, 528). Rather wide, moderately convex, comparatively short, depressed on disk, parallel. Apex wide, slightly oblique, truncature faintly concave, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation double, modertely fine to rather coarse, and very fine, moderately dense, surface impilose, glossy.

Lower surface. Prosternal process rather short, moderately wide, depressed, apex rather short, rather narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 189l). Stylomere elongate, rather narrow, apically rather parallel, median border faintly convex, apex rounded, with 4-5 elongate apical setae. Lateral plate rather elongate, with 2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype not dated.

Distribution (Fig. 627). Northwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

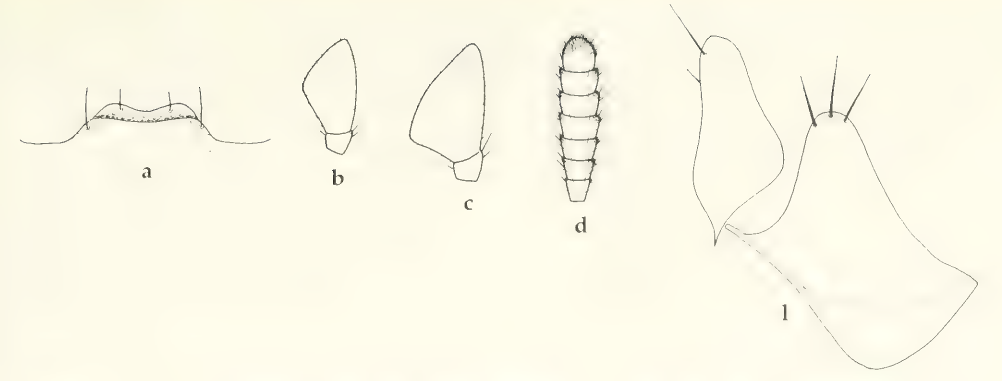
Etymology. The name refers to the compact body shape.

Adelotopus latipalpis, spec. nov.

Figs 190, 378, 529, 627

Types. Holotype: ♀, Daly W, J. H. Sedlacek Collector (QMB T26078).

Diagnosis. Medium-sized, fairly wide, fairly depressed, completely reddish species, distinguished by rather wide pronotum with wide apex and fairly wide lateral margins, presence of microreticulation



Figs 190a-d, l. *Adelotopus latipalpis*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

on head and on pronotum, wide elytra with comparatively coarse, though fairly sparse puncturation, and rather triangular, at apex rounded, on median margin faintly concave stylomere.

Description

Measurements. Length: 5.7 mm. Ratios. Width/length of pronotum: 1.66; width base/apex of pronotum: 1.43; width pronotum/head: 1.55; length/width of elytra: 1.50; length elytra/pronotum: 2.49.

Colour. Upper and lower surface including mouth parts, antennae, and legs reddish, head and pronotum faintly darker.

Head (Figs 190a-d). Rather short, fairly wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally slightly projecting, lateral borders distinctly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, apex obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 12 elongate setae. Terminal palpomere of maxillary palpus widened, distinctly securiform. Terminal palpomere of labial palpus very wide, markedly securiform. Antenna rather elongate, in middle barely widened, 8th-9th antennomeres c. 1.5 × as wide as long. Microreticulation present, fine, slightly superficial, puncturation very fine, moderately dense. Surface with weak sulcus medially of eyes, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 378). Rather wide, moderately convex, base distinctly wider than apex, widest near base. Apical angles rather produced, at apex rather acute, fairly oblique, attaining posterior third of eyes. Apex fairly excised, convex in excision, distinctly bordered. Sides moderately convex, fairly oblique. Margins rather wide, rather widely chanelled, finely bordered. Basal angles widely rounded off. Base almost straight, distinctly bordered. Surface near base with shallow transverse impression. Microreticulation almost absent, though faint traces visible, puncturation moderately coarse, fairly dense, surface impilose, glossy.

Elytra (Figs 378, 529). Rather wide, moderately convex, comparatively short, fairly depressed on disk, parallel. Apex wide, slightly oblique, truncature almost straight, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel moderately wide, partly concealed. Basal border incomplete, attaining about middle of base. Lateral margin asetose. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation coarse, rather sparse, surface impilose, glossy.

Lower surface. Prosternal process rather short, moderately wide, depressed, apex rather short, rather narrow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum rather elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus as long as wide, tibial groove of profemur rather shallow, anterior border straight, anterior plate overlapping the groove for about apical half, posterior border of groove sharp. Femur wide. Metatibia elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 2.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 190l). Stylomere gently triangular, median border straight to faintly convex, apex rounded, with 2 elongate subapical setae. Lateral plate rather elongate, with 3 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype not dated.

Distribution (Fig. 627). Northern part of Northern Territory. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the very wide maxillary and labial palpi.

laevis-group

Diagnosis. Small to medium-sized, rather narrow and convex, light reddish species. Labrum bisetose; glossa c. 10-12-setose; lateral margin of pronotum rather narrow, basal angle widely rounded; basal border line of elytra abbreviated, attaining the outer third of base; scutellar pore absent; lateral margin of elytra with a fringe of elongate setae; series of umbilical pores with 6 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather wide and short, asymmmetric, apex acute; internal sac complicate, apex without a distinct oblique fold.

Larvae. 1st instar larvae known of 2 species.

Distribution. 3 species and 1 aditional subspecies in northeastern Queensland, northernmost Northern Territory, and northern and southern central Western Australia.

Systematic position. This group is the adelphotaxon of the *rubiginosus*-group, but is perhaps more plesiomorphic in the presence of a fringe of elongate setae along the margins of the elytra, though more apomorphic in the acute apex of the aedeagus and the presumably reduced oblique fold in the internal sac.

Note. Females of this group are sometimes not easy identified, because the shape of the stylomeres varies to a considerable degree.

Adelotopus laevis Macleay, 1888

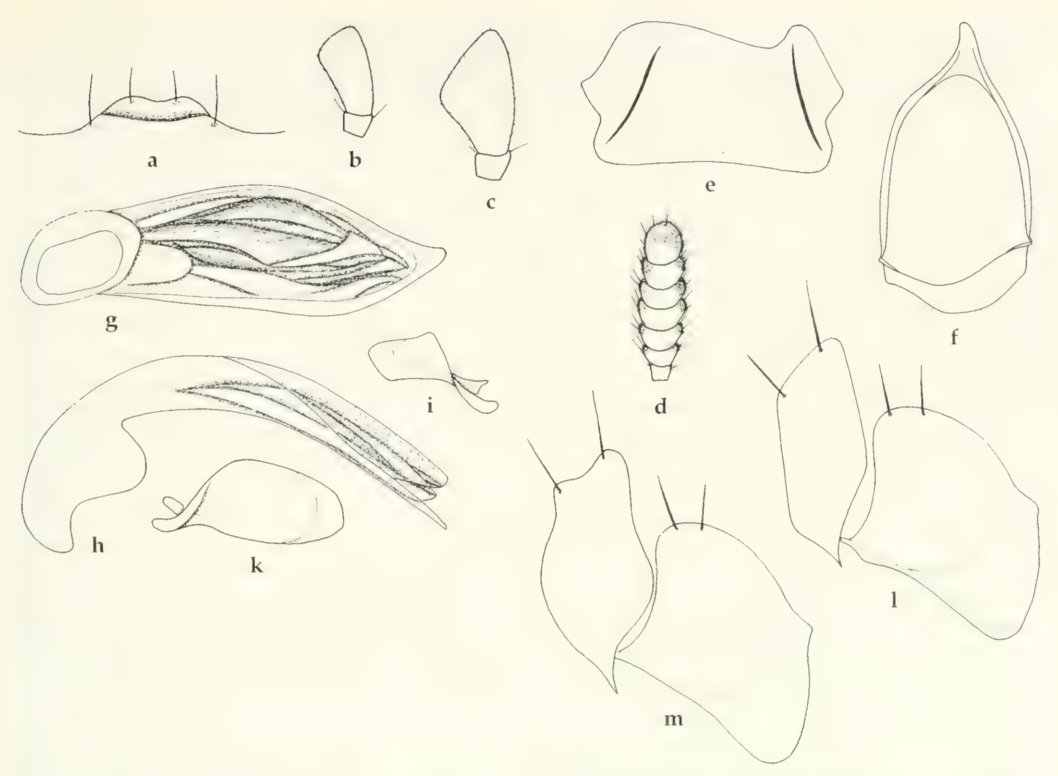
Figs 191, 379, 530, 629

Adelotopus laevis Macleay, 1888, p. 460; Notman 1925, p. 7, 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51.

Types. Lectotype (by present dedesignation): 1 (defect, sex?), N. W. Austr., Holotype, *Adelotopus laevis* Macl. N. W. Australia (ANIC-MMS).

Type locality. From label: "N. W. Australia"; from description: "Kings Sound", northwestern Australia.

Diagnosis. Small to medium-sized, completely light reddish species with a fringe of long setae along at least basal half of elytra. Distinguished from related species by rather wide pronotum, fine and sparse puncturation of pronotum, moderately wide aedeagus with acute apex turned to left, and obliquely transverse or gently bituberculate apex of stylomere.



Figs 191a-m. *Adelotopus laevis* Macleay. Details of head and genitalia. For legends see fig. 100. **m.** ♀ stylomeres of Queensland specimens.

Description

Measurements. Length: 4.1-5.5 mm. Ratios. Width/length of pronotum: 1.41-1.50; width base/ apex of pronotum: 1.43-1.52; width pronotum/head: 1.47-1.60; length/width of elytra: 1.52-1.61; length elytra/pronotum: 2.29-2.40.

Colour. Upper and lower surface including mouth parts, antennae, and legs more or less light reddish, usually fore body and apex of elytra faintly darker.

Head (Figs 191a-d). Rather short, wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation absent, puncturation very fine and sparse, somitimes difficult to detect. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 379). Rather wide, rather convex, distinctly wider than long, base distinctly wider than apex, widest nearbase. Apical angles fairly produced, at apex angulately rounded, fairly oblique, attaining posterior third of eyes. Apex fairly excised, markedly convex in excision, bordered. Sides distinctly convex, rather oblique. Margins moderately wide, anteriorly slightly chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, moderately coarsely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation very fine,

sparse, surface impilose, highly glossy.

Elytra (Figs 379, 530). Moderately elongate, fairly convex, though slightly depressed on disk, rather parallel, though faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, lateral margin crenulate and at least in basal half with a fringe of elongate setae. Marginal channel moderately narrow, in basal third even narrowed, then widened again, partly concealed. Basal border incomplete, attaining outer third of base. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine to fairly coarse, rather sparse, surface impilsoe, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, convex, apex narow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum very elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Moderately short, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third only, posterior border of groove sharp. Femur wide. Metatibia fairly short, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 191e-k). Genital ring moderately wide, rather convex, asymmetric, with elongate, curved apex, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base faintly excised, basal angles rounded, lateral parts fairly short. Aedeagus elongate, depressed, in middle rather widened, strongly narrowed to apex, highly asymmetric. Basal part long, rather bent. Lower surface concave. Apex narrow, obtusely acute, asymmetrically turned to left. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres rather large, square, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 191l). Stylomere moderately wide, more or less narrowed to apex to apex, apex ralatively wide, obliquely transverse or gently bituberculate, with 2-4 elongate apical setae. Lateral plate rather short, with 2-4 elongate apical setae.

Variation (Fig. 191m). There is considerable variation in size, relative width of pronotum, length of elytra, degree of puncturation, length of aedeagus and degree of curvature of apex, and shape of stylomere. This variation seems to be somewhat regional, because northwestern Australian specimens tend to be smaller and wide, possess a finer punctaturation, a longer and at apex more strongly recurved aedeagus, and less bituberculate apex of stylomere. These differences, however, do not seem to justify a subspecific differentiation of the western and eastern specimens, because the specimens from the Northern Territory seem to be somewhat intermediary and because there are some exceptions from this distribution.

Vivipary. Confirmed by discovery of laevae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gums near a large, water-bearing river, other specimens collected "at light", some mounted with ants of genus *Iridomyrmex* Mayr on same card. Dated specimens captured in April, June, October and from December to February.

Distribution (Fig. 629). Northern Queensland from base of Cape York Peninsula, northern part of Northern Territory, northwestern Australia south to Fortescue River, ? Victoria. The latter record refers to a single old specimen labelled "Victoria" that is likely mislabelled.

Material examined (112). **Vic:** 1♀, 10692 (SMTD). – **Qld:** 1♂, Barcaldine 6.I.1974, GF. Gross (SAMA); 1♀, 254, P. Charlotte Bay, C.F., Not *aphodioides* by smooth proth. particular nr. sides ab. angles (ANIC); 1♂, *A. rubiginosus* Newm. ?, Princess Charlotte Bay (SAMA); 6♂, 6♀, Australia, Qld 93/61, Einasleigh R. 33 km w. Mt. Surprise, 11.6.1993, M. Baehr (CBM, ZSM). – **NT:** 1♀, G. F. Hill Darwin (ANIC); 11♂♂, 21♀♀, Adelaide River, N. W. Australia, J. J. Walker, G. C. Champion Coll. B.M. 1927-409 (BMNH); 2♀♀, 5558, Adelaide River 92-20., det. *rubiginosus* (BMNH, CBM); 1♀, Daly Waters I.64, J. H. Sedlacek Collector (CSB); 2♀, Katherine XII.57 leg. H. Demarz, *Adelotopus* spec. ?, *Adelotopus castaneus* Cast. Det. B. P. Moore '66 (FMT); 2♀♀, Katherine XII.57 leg. H. Demarz, Pseudomorphid. (FMT); 1♀, Katherine IV.71, J. Sedlacek Collector (CSB). – **WA:** 7♂, 7♀, Derby, N. V. Austr. Mjöberg, Okt. (CBM, NHRS); 2♀♀, Derby, W. D. Dodd (SAMA); 2♂♂, Kimberley district, N. V. Austr. Mjöberg, febr. (NHRS); 1♀, Milly Milly 300 m, 6.X.62, Collectors: E. S. Ross D. Q. Cavagnaro (CAS); 7♂♂, 5♀♀, Roeburne W. D. Dodd (SAMA); 1♀, Onslow, C. French's Coll., *Adelotopus castaneus* Cast. (MCZ);

1♂, 2♀♀, Onslow, C. French's Coll., *A. aphodioides* (NMV; 1♂, 1♀, Fortescue R. Hamersley Range, W. D. Dodd (SAMA); 13♂♂, 1♀♀, Fortescue River Hamersley Rge: W. D. Dodd, Seems to small to be *aphodioides* (SAMA). – ?: 2♂♂, Bocknuck (?) Krapton (?) 1.XII.91, *Adelotopus* sp. ? Id. by T. G. Sloane (SAMA); 1♂, 1♀, Collection E. Rousseau, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB).

Adelotopus ciliatus, spec. nov.

This species occurs presumably in two subspecies, a southern one in central eastern Queensland between Rockhampton and Townsville, and a northern one at the base of Cape York Peninsula. The single specimen from the latter area is so aberrant in proportion of pronotum, size and density of puncturation, and shape of left paramere, that I prefer to describe it as a subspecies.

Diagnosis. Small to medium-sized, completely light reddish species with a fringe of long setae along at least basal half of elytra. Distinguished from related species by rather wide pronotum, either fairly coarse and dense, or fine and rather sparse puncturation of pronotum, in middle markedly widened aedeagus with onbtusely rounded, straight apex, and obliquely transverse apex of stylomere.

Adelotopus ciliatus ciliatus, spec. nov.
Figs 192, 380, 531, 629

Types. Holotype: ♂, Australia: Queensland, 32 km N Rockhampton 8.II.1964, J. Sedlacek Collector BISHOP MUSEUM (BMH). – Paratypes: 3♂♂, 9♀♀, same data (BMH, CBM); 1♀, *rufescens* Chaud., Victoria, Ex Musaeo Mniszech (MNHN); 2♀♀, Australien, Qld G38 Raglan Ck., 10 km n. Mt. Larcom, 21.11.1990, leg. Gerstmeier (CBM); 2♀♀, Theodore Q. 10-1-45 E. Vallis (?) E. Sutton, E. Sutton Coll. 1964 (QMB); 1♂, 1♀, 10508, *castaneus* Cast. Peak Downs, Ex Musaeo L. Fairmaire 1896 (MNHN); 1♀, 25 Mi N. Rockhampton, J. Sedlacek Collector (CSB); 2♀♀, Australia: Qld Rockhampton 26-27.XI.1967, J. & M. Sedlacek Collectors BISHOP (BMH); 1♂, 40 km N Rockhampton, J. & M. Sedlacek Collectors BISHOP, Drawn 1967 Mary Catrop No. 439, Australia Pseudomorphini not studied det. Darlington 69 (BMH); 1♀, Australien, Qld 27, Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd. 12.11.1990, M. Baehr (CBM); 4♂♂, 5♀♀, Australia: Queensland 128 km S Sarina Lotus Ck, 8.II.1964, J. Sedlacek Collector BISHOP MUSEUM (BMH); 2♀♀, 1 (sex?), Townsville, Qld 16.10.02 F. P. Dodd (ANIC); 1♀, Townsville, Qld 9.12.02 F. P. Dodd, G. Bryant Coll. 1919-147., det. *rubiginosus* (BMNH); 1♂, Townsville, Qld 18.10.02 F. P. Dodd, G. Bryant Coll. 1919-147., det. *rubiginosus* (BMNH); 1♀, Townsville, Qld 18.10.02 F. P. Dodd (ANIC); 3♂♂, 3♀♀, Townsville Queensland, G. Bryant Coll. 1919-147., det. *rubiginosus* (BMNH); 1♂, Townsville Queensland, G. Bryant Coll. 1919-147, *Adelotopus rubiginosus* Newm. (FMT); 1♀, Townsville, Q. J.S., I.52, *Adelotopus castaneus* Cast., Borrowed ex AMNH (Smithson); 1♀, Queensland: Townsville 1952, J. Sedlacek Collector (CSB); 3♀♀, Townsville, Queensland Townsville, 19, J. Sedlacek Collector (CSB).

Diagnosis. Distinguished from *A. ciliatus tenuipunctatus*, subspec. nov. by basally less wide wide pronotum, rather coarse and dense puncturation of head and pronotum, and gently convex apex of left paramere.

Description

Measurements. Length: 4.05-5.3 mm. Ratios. Width/length of pronotum: 1.37-1.52; width base/apex of pronotum: 1.30-1.51; width pronotum/head: 1.46-1.65; length/width of elytra: 1.60-1.66; length elytra/pronotum: 2.35-2.50.

Colour. Upper and lower surface including mouth parts, antennae, and legs more or less light reddish, usually fore body and apex of elytra faintly darker.

Head (Figs 192a-d). Rather short, wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation absent, punctu-

ration usually moderately fine to fairly coarse and moderately dense. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 380). Rather wide, rather convex, distinctly wider than long, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtusely rounded, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, bordered. Sides distinctly convex, rather oblique. Margins moderately wide, anteriorly slightly chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, moderately coarsely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation usually rather coarse, fairly dense, surface impilose, highly glossy.

Elytra (Figs 380, 531). Moderately elongate, fairly convex, though slightly depressed on disk, rather parallel, though faintly narrowed in basal third. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, lateral margin crenulate and at least in basal half with a fringe of elongate setae. Marginal channel moderately narrow, in basal third even narrowed, then widened again, partly concealed. Basal border incomplete, attaining outer third of base. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation fairly coarse, moderately sparse, surface impilose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, convex, apex narow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum very elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Moderately short, 1st tarsomere of protarsus about as long as wide, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third only, posterior border of groove sharp. Femur wide. Metatibia fairly short, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 192e-k). Genital ring elongate, moderately wide, rather convex, highly asymmetric, with very convex left arm and almost straight right arm and with elongate, curved apex, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base faintly excised, basal angles rounded, lateral parts fairly short. Aedeagus rather short, depressed, in middle markedly widened, strongly narrowed to apex, asymmetric, left side faintly conccave, right side slightly convex. Basal part long, strongly bent. Lower surface straight. Apex narrow, obtusely rounded, rather symmetric. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres rather large, square, right with widely rounded apex, left paramere considerably larger than right, with straight to slightly convex apex.

♀ genitalia (Fig. 192l). Stylomere moderately wide to wide, apex ralatively wide, obliquely transverse, with 2-4 elongate apical setae. Lateral plate moderately short, with 3-6 elongate apical setae.

Variation. Somewhat variable with respect to size, relative width and shape of pronotum, degree of puncturation, and shape of stylomere.

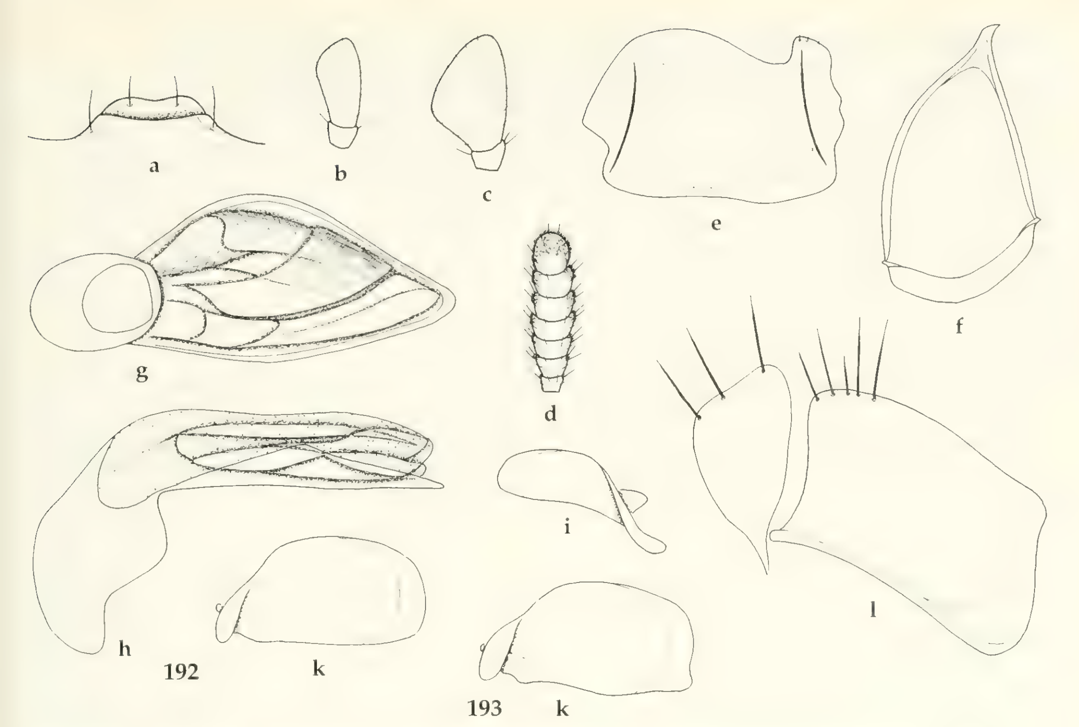
Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gums and other gum-type eucalypts. Dated specimens captured from October to February.

Distribution (Fig. 629). Eastern Queensland from just south of Rockhampton to Townsville, ? Victoria. The latter record refers to a single ♀ from the Chaudoir Collection, simply labelled "Victoria" that is likely mislabelled.

Material examined (52). Only the type series.

Etymology. The name refers to the ciliate margin of the elytra.



Figs 192a-l. *Adelotopus ciliatus ciliatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.
Fig. 193k. *Adelotopus ciliatus tenuipunctatus*, subspec. nov. ♂ left paramere.

Adelotopus ciliatus tenuipunctatus, subspec. nov.

Figs 54, 193, 381, 532, 629

Types. Holotype: ♂, Hann River, Kennedy Road, Q. 15°14'S, 144°55'E, 15.VI.68, F. Parker (ANIC).

Diagnosis. Distinguished from nominate subspecies by basally wider pronotum, fine and rather sparse puncturation of head and pronotum, and a small hump at the lower part of the apex of the left paramere.

Description

Measurements. Length: 5.2 mm. Ratios. Width/length of pronotum: 1.52; width base/apex of pronotum: 1.51; width pronotum/head: 1.65; length/width of elytra: 1.66; length elytra/pronotum: 2.41.

Colour. Similar to nominate subspecies.

Head. Rather similar to nominate subspecies, though anterior margin of head more convex and puncturation of surface very fine and rather sparse.

Pronotum (Fig. 381). Basically similar to nominate subspecies, though more convex, base in comparison to apex relatively wider, and puncturation of surface fine and rather sparse.

Elytra (Figs 54, 381, 532). Similar to nominate subspecies, though puncturation slightly less coarse and dense.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia (Fig. 193k). Basically similar to nominate subspecies, though aedeagus in middle even more widened and right paramere with a small hump at lower part od apex.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Largely unknown. Holotype collected in June.

Distribution (Fig. 629). Base of Cape York Peninsula. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the fine and sparse puncturation compared with the nominate subspecies.

Adelotopus brevior, spec. nov.

Figs 194, 382, 533, 629

Types. Holotype: ♂, Mingenew W. A. 20 Dec 1980 at light K. & E. Carnaby (ANIC). – Paratypes: 2♂♂, 2♀♀, same data (ANIC, CBM); 2♂♂, Geraldton. W.A. W. du Boulay (NMV).

Diagnosis. Small, completely light reddish species with a fringe of long setae along at least basal half of elytra. Distinguished from *A. laevis* Macleay by shorter elytra, in middle rather strongly widened aedeagus with obtusely rounded, straight apex, and obliquely transverse apex of stylomere, from *A. ciliatus*, spec. nov. by shorter elytra, fine and sparse puncturation of pronotum, and less widened aedeagus.

Description

Measurements. Length: 4.25-4.6 mm. Ratios. Width/length of pronotum: 1.46-1.50; width base/apex of pronotum: 1.41-1.48; width pronotum/head: 1.51-1.60; length/width of elytra: 1.51-1.54; length elytra/pronotum: 2.25-2.31.

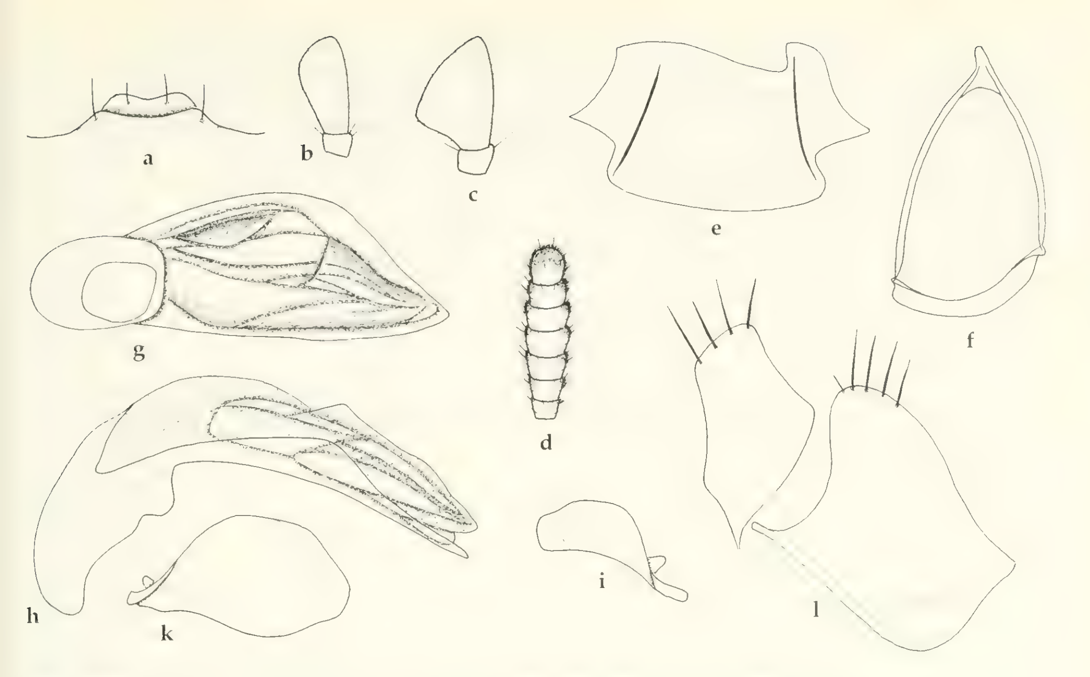
Colour. Upper and lower surface including mouth parts, antennae, and legs more or less light reddish, usually fore body and apex of elytra faintly darker.

Head (Figs 194a-d). Rather short, wide, rather depressed. Anterior border but faintly convex, lateral angle rounded, laterally faintly projecting, lateral borders slightly narrowed behind eyes. Clypeal suture only at base distinct, in middle widely interrupted. Labrum rather wide and short, moderately overlapped by the clypeus, apex moderately concave. Antennal groove laterally sharply bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally rounded, obtuse. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 10-12 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres almost 2 × as wide as long. Microreticulation absent, puncturation very fine and sparse. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 382). Rather wide, rather convex, distinctly wider than long, base distinctly wider than apex, widest near base. Apical angles moderately produced, at apex obtusely rounded, fairly oblique, surpassing posterior border of eyes. Apex fairly excised, markedly convex in excision, bordered. Sides slightly convex, or almost straight, usually even faintly concave distinctly in front of basal angles, rather oblique. Margins rather wide, rather chanelled, finely bordered. Basal angles widely rounded off. Base faintly convex, moderately coarsely bordered. Surface near base without or with extremely shallow transverse impression. Microreticulation absent, puncturation fine or very fine, rather sparse, surface impilose, highly glossy.

Elytra (Figs 382, 533). Moderately elongate, fairly convex, though slightly depressed on disk, rather parallel, though faintly narrowed in basal third, ususally faintly widened in apical part. Lateral borders almost straight. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, lateral margin crenulate and at least in basal half with a fringe of elongate setae. Marginal channel narrow, in basal third even narrowed, then widened again, mostly concealed. Basal border incomplete, attaining outer third of base. Series of umbilical pores consisting of 6 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately to fairly coarse, moderately sparse, surface impilose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, convex, apex narow, compressed, passing over in an almost right angle from ventral surface, shortly setose. Metepisternum elongate,



Figs 194a-l. *Adelotopus brevior*, spec. nov. Details of head and genitalia. For legends see fig. 100.

c. 1.8-2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly setose.

Legs. Moderately short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical third only, posterior border of groove sharp. Femur wide. Metatibia fairly short, <5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 194e-k). Genital ring elongate, moderately wide, rather convex, fairly asymmetric, with moderately elongate apex, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with moderately deep excision, base straight to gently convex, basal angles rounded, lateral parts fairly elongate. Aedeagus rather short, depressed, in middle markedly widened, strongly narrowed to apex, asymmetric, left side faintly concave, right side slightly convex. Basal part long, strongly bent. Lower surface straight. Apex narrow, obtusely rounded, rather symmetric. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres large, square, somewhat irregularly shaped, with somewhat tapering, widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 194l). Stylomere rather wide, apex wide, obliquely convex, with 3-4 elongate apical setae. Lateral plate moderately short, with 3-5 elongate apical setae.

Variation. There is some variation in shape of lateral margions of pronotum and in size and density of puncturation.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens habe been collected "at light". Dated specimens captured in December.

Distribution (Fig. 629). Coastal southwestern Australia. Known only from two closeby localities.

Material examined (7). Only the type series.

Etymology. The name refers to the shorter elytra as compared with related species.

Diagnosis. Rather small, very narrow and elongate, cylindrical, completely dull black species. Labrum bisetose; glossa c. 16-setose; lateral margin of pronotum very narrow, basal angle rounded off; basal border line of elytra abbreviated, attaining only outher ⅓ of base; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 4 subhumeral pores only; abdominal sterna with 2-3 ambulatory setae each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather elongate and narrow, without flange at apex; internal sac of aedeagus fairly complicate, structure of apex unknown.

Larvae. Unknown.

Distribution. A single species in southwestern Australia.

Systematic position. This group is probably the more plesiomorphic adelphotaxon of the *linearis*-group, especially in the absence of an elytral pattern.

Adelotopus unicolor, spec. nov.

Figs 55, 195, 383, 534, 630

Types. Holotype: ♂, Kg. Geo. Sound, Janson Acq. 1884 (MNHN).

Diagnosis. Small, narrow, cylindrical, uniformly blackish species. Distinguished from all other similar species by the absence of a reddish poattern on the elytra.

Description

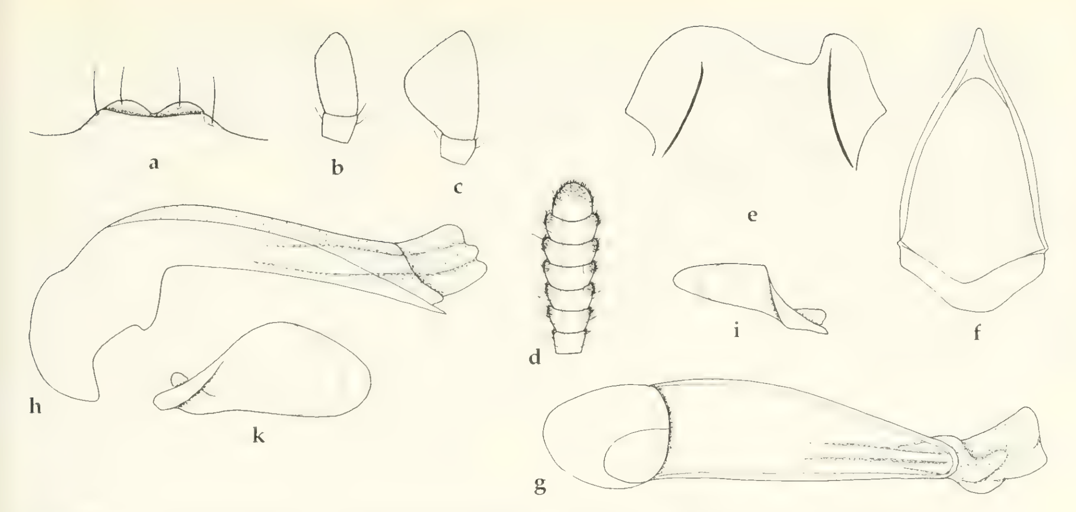
Measurements. Length: 4.65 mm. Ratios. Width/length of pronotum: 1.17; width base/apex of pronotum: 1.18; width pronotum/head: 1.23; length/width of elytra: c. 2.08; length elytra/pronotum: 2.58.

Colour. Blackish, unicolourous, elytra becoming dark piceous towards apex, lateral margins of pronotum and elytra very faintly reddish translucent. Lower surface of head and thorax piceous, abdomen dark reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 195a-d). Moderately short, rather narrow, depressed. Anterior border almost regularly semicircular, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, strongly overlapped by the clypeus, apex slightly concave, apparently bisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, slightly narrowed to apex, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation dense and fine, puncturation very fine, rather difficult to detect, fairly dense. Surface with weak sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of very short and inconspicuous setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 383). Narrow, very convex, not much wider than long, base only slightly wider than apex. Apical angles feebly produced, at apex obtuse, rather oblique, just attaining posterior border of eyes. Apex feebly excised, slightly convex in excision, distinctly bordered. Sides almost straight, very faintly oblique, widest near base. Margins very narrow, faintly chanelled, finely bordered. Basal angles moderately widely rounded off. Base faintly convex, bordered. Surface near base without transverse impression. Microreticulation very fine, somewhat superficial, puncturation moderately fine, dense, surface with some extremely fine, irregular lines, impilose, moderately dull.

Elytra (Figs 55, 383, 534). Narrow and elongate, cylindrical, almost parallel. Apex wide, transverse, truncature rather convex, in middle even slightly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel extremely narrow throughout, mostly concealed. Basal border incomplete, attaining outer third of



Figs 195a-k. *Adelotopus unicolor*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

base. Lateral border asetose. Series of umbilical pores consisting of 4 closely set pores behind shoulder. Setae short. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine, dense, surface with some very fine, irregular wrinkles, impilose, rather glossy.

Lower surface. Prosternal process rather elongate, moderately wide, rather tectiform, apex fairly wide, gently convex, passing over in an almost right angle from ventral surface, not setose. Metepisternum very elongate, c. 2.4 × as long as wide, in posterior third not hollowed. Abdominal sterna with 2-3 elongate setae each side. Lower surface rather apparently impunctate and impilose.

Legs. Moderately elongate, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, slightly <5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 195e-k). Genital ring moderately wide, rather triangular, symmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII moderately wide, apically evenly convex, with deep excision, base destroyed, lateral parts fairly short. Aedeagus elongate, depressed, in middle barely widened, evenly narrowed to apex symmetric. Basal part fairly elongate and rather bent. Lower surface straight. Apex rather narrow, evenly rounded. Orifice very elongate, internal sac everted. Both parameres rather narrow, slightly triangular, with moderately rounded apex, left paramere considerably larger than right.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown.

Distribution (Fig. 630). Southern part of southwestern Australia.

Material examined (1). Only the holotype.

Etymology. The name refers to the uniformly blackish colour.

linearis-group

Diagnosis. Rather small, very narrow and elongate, cylindrical, dull black species with either almost apical ⅘ of elytra distinctly, or apex indistinctly reddish. Labrum bisetose; glossa c. 12-setose or with 2 more elongate and c. 10 shorter setae; lateral margin of pronotum very narrow, basal angle rectangular; basal border line of elytra abbreviated, attaining only outher ⅓ of base; scutellar pore

absent; lateral margin of elytra without elongate setae; series of umbilical pores with 2 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather elongate and narrow, without flange at apex; internal sac of aedeagus complicate, without oblique fold at apex.

Larvae. Unknown.

Distribution. 2 species in New South Wales, Eastern Queensland, northernmost Northern Territory, northwestern Australia.

Systematic position. This group is probably the apomorphic adelphotaxon of the *unicolor*-group.

Adelotopus linearis Macleay, 1888

Figs 1, 56, 196, 384, 535, 630

Adelotopus linearis Macleay, 1888, p. 460; Notman 1925, p. 7, 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51.

Types. Lectotype (by present designation): ♂, N. W. Australia, Syntype, *Adelotopus linearis* Macl., N. W. Australia (ANIC-MMS). – Paralectotype: 1 (sex ?), same data (ANIC-MMS).

Type locality. From description: "Kings Sound", Western Australia.

Diagnosis. Medium-sized, very narrow, elongate, cylindrical species, distinguished by the mostly reddish elytra, very distinct microreticulation, dull surface, and markedly club-shaped antenna.

Description

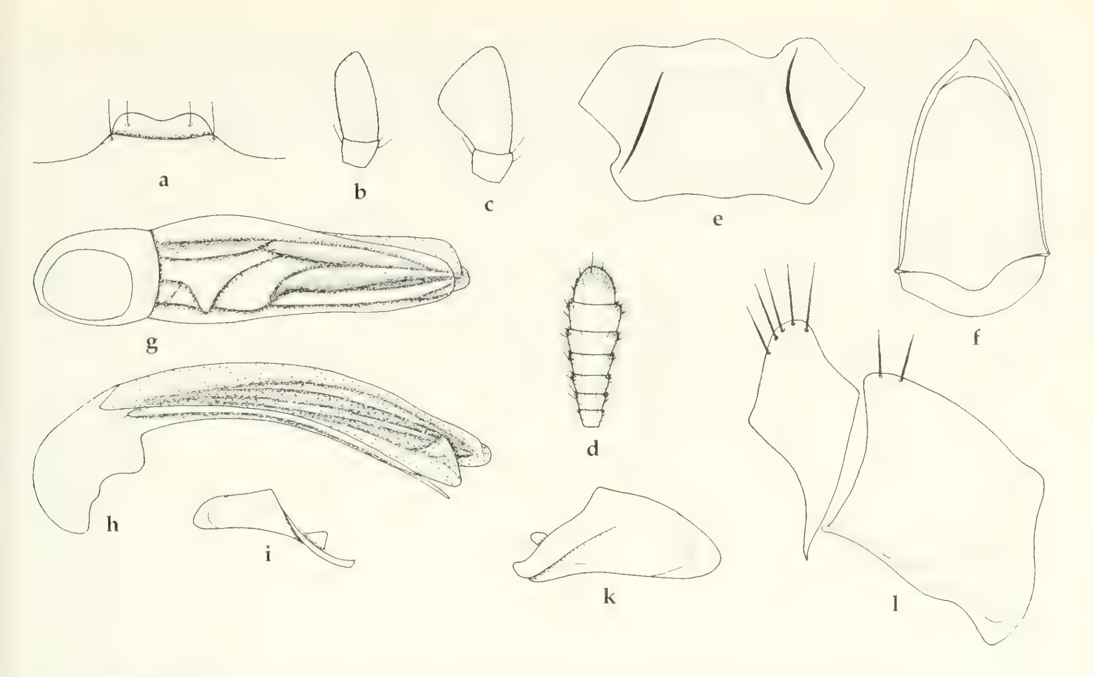
Measurements. Length: 4.3-5.0 mm. Ratios. Width/length of pronotum: 1.13-1.20; width base/apex of pronotum: 1.16-1.23; width pronotum/head: 1.22-1.27; length/width of elytra: 1.95-2.05; length elytra/pronotum: 2.37-2.43.

Colour (Figs 56, 384). Dull black, lateral margins of pronotum distinctly reddish translucent. Elytra light reddish with small triangular black scutellar spot that occupies the basal fifth or sixth. Lower surface of head blackish, thorax and abdomen reddish-piceous. Mouth parts, antennae, and legs dark reddish or reddish-piceous, tibiae and tarsi barely darker.

Head (Figs 196a-d). Rather short, moderately wide, fairly rounded. Anterior border gently convex, lateral angle widely rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture invisible, marked only at base by a short pit on either side. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave. Antennal groove laterally sharply bordered, latero-posteriorly depressed. Mental tooth triangular, very short, apex acute. Wings of mentum wide, laterally convex, apex obtusely rounded. Glossa wide, tongue-like, apically transversae, ventrally without distinct keel, at border with 2 elongate and few shorter setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short, basally narrow, markedly widened towards apex, rather club-shaped, 8th-9th antennomeres almost 2.5 × as wide as long. Microreticulation fine, very distinct, puncturation invisible. Surface with weak sulcus medially of eyes, impilose, markedly dull, somewhat silky. Ventrolaterally of eyes with a row of extremely short setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 384). Narrow, elongate, almost quadratic and barely wider than long, base barely wider than apex, widest slightly in front of base. Apical angles but feebly produced, at apex rounded, oblique, not attaining posterior border of eyes. Apex feebly excised, convex in excision, unbordered or very faintly and irregularly bordered. Sides more or less distinctly convex, straight, slightly incurved towards basal angles. Margins moderately narrow, slightly chanelled, finely bordered. Basal angles rectangular, very shortly rounded off, slightly produced posteriorly. Base laterally faintly concave, in middle slightly convex, unbordered. Surface near base withoutperceptible transverse impression. Microreticulation fine, very distinct, puncturation imperceptible, surface with some fine transverse or somewhat irregular wrinkles, impilose, very dull, somewhat silky.

Elytra (Figs 56, 384, 535). Narrow and very elongate, highly convex, parallel. Lateral borders almost straight. Apex very wide, transverse, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal



Figs 196a-l. *Adelotopus linearis* Macleay. Details of head and genitalia. For legends see fig. 100.

channel anteriorly moderately narrow, in basal half even distinctly widened, apically almost diappearing, partly concealed. Basal border incomplete, attaining about outer third of base. Lateral border asetose. Series of umbilical pores consisting of only 2 pores behind shoulder. Setae fairly elongate. Scutellum very wide. Striae including sutural stria absent, though marked by a row of extremely inconspicuous setiferous punctures, that are virtually invisible and only recognizable by the very short and inconspicuous hairs. Microreticulation distinct, rather fine, almost isodiametric, surface with rows of extremely short hairs along striae, rather dull.

Lower surface. Prosternal process rather elongate, narrow, tectiform, apex ventrally narrow, tectiform, passing over in a right angle from ventral surface, very finely setose. Metepisternum very elongate, c. 2.5 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface very sparsely punctate and very shortly setose.

Legs. Rather elongate, 1st tarsomere of protarsus c. as wide as long, tibial groove of profemur moderately deep, anterior plate overlapping the groove only for apical third, posterior border of groove sharp. Femur wide. Metatibia narrow and elongate, c. 6 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 196e-k). Genital ring rather wide, convex, barely asymmetric, with slightly asymmetric, rather small, fairly excised base. Sternum VII rather wide, apically gently excised, with shallow, oblique excision, base faintly bisinuate, basal angles obtuse, lateral parts fairly short. Aedeagus elongate, depressed, in middle barely widened, feebly narrowed to apex, barely asymmetric. Basal part short, moderately bent. Lower surface strongly concave. Apex wide, widley rounded. Orifice elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres elongate, right rather parallel, with obliquely rounded apex, left paramere considerably larger than right, triangular, with shortly ronuded apex and with an longitudinal edge.

♀ genitalia (Fig. 196l). Stylomere wide, narrowed to apex, apex obliquely widely rounded, with 4-6 elongate apical setae. Lateral plate short, with 2-3 elongate apical setae.

Variation. Apart from some variation of size and relative length of elytra little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of gum-type eucalypt, other specimens captured "ex mound of *Coptotermes acinaciformis*" and "on freshly burnt tree trunk". Dated specimens captured in January, May, October, and December, but most during summer.

Distribution (Fig. 630). Eastern Queensland, northernmost Northern Territory, northwestern Australia.

Material examined (18). **Qld:** 1♀, Biggenden, 5.I.1972, H. Frauca (ANIC); 1♀, Gayndah Mus. Godeffroy No 10628, *Adelotopus linearis* Macl. Det. Sloane '07 (ANIC); 2♀♀, Maryborough (SAMA); 1♀, Rockhampton 26.XII.1967, J. Sedlacek Collector (CSB); 1♂, 15 km s. Marlborough, 21.I.1982, M. Baehr, *Adelotopus linearis* Macl. (CBM); 1♀, Townsville 9.XII.02 F. P. Dodd, *Adelotopus linearis* Macl. 8305 (SAMA); 1♀, Townsville 18.X.02 F. P. Dodd, G. Bryant Coll. 1919 (BMNH); 1♀, Townsville X.02 F. P. Dodd, G. Bryant Coll. 1919 (BMNH); 1♀, Townsville 12.XII.02 F. P. Dodd (ANIC); 1♂, 10 km E of Mareeba, 9.XII.1992, F. Ronquist (DPIM); 1♂, 2♀♀, Cooktown 28.V.51, C. Oke, *Adelotopus linearis* Macl. (NMV). – **NT:** 1♂, 1♀, Yirrkala, 31.I.68, J. A. L. Watson (ANIC). – **WA:** 1♂, 1 (?), N.W. Australia, Syntype, *Adelotopus linearis* Macl. (ANIC-MMS).

Adelotopus bacillus, spec. nov.

Figs 57, 197, 385, 536, 630

Types. Holotype: ♂, N. S. W.: 19, J. Sedlacek Collector (QMB T26075). – Paratype: 1♀, Darwin 8.12., J. Sedlacek Collector (CBM).

Diagnosis. Medium-sized, narrow, cylindrical, extremely elongate, black species with wide, ill delimited, red apex of elytra that occupies the apical third and is anteriorly prolonged along suture. Distinguished from related species by very short, obtuse apical angles, rectangular basal angles, and rather wide lateral margin of pronotum, strong microreticulation on whole body, absence of puncturation on fore body, and uniseriate, rasp-like puncturation on the elytra.

Description

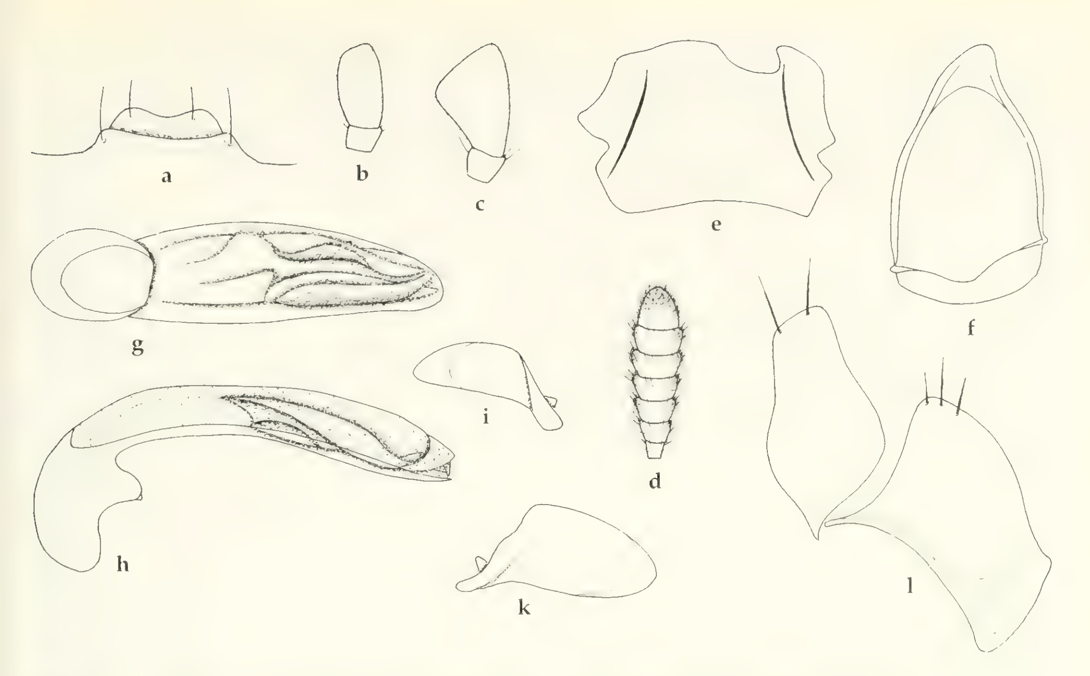
Measurements. Length: 5.0-5.2 mm. Ratios. Width/length of pronotum: 1.15-1.17; width base/apex of pronotum: 1.17-1.20; width pronotum/head: 1.24-1.26; length/width of elytra: 2.04-2.05; length elytra/pronotum: 2.41-2.45.

Colour (Figs 57, 385). Dull black, lateral margins of pronotum and elytra clearly reddish translucent, apical third of elytra ill defined reddish, this colour prolonged very ill delimited anteriorly along suture. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 197a-d). Moderately short, rather narrow, depressed. Anterior border almost regularly semicircular, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, strongly overlapped by the clypeus, apex slightly concave. Antennal groove laterally sharply bordered, latero-posteriorly with convex area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally and apically rounded, only inner apex dentiform. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary elongate, not securiform. Terminal palpomere of labial palpus moderately wide, barely securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation extremely fine and desne, distinct, puncturation not visible. Surface with weak sulcus medially of eyes, impilose, dull, rather silky. Ventrolaterally of eyes with a row of very short and inconspicuous setae. Suborbital field apparently faintly punctate. Gula impilose.

Pronotum (Fig. 385). Narrow, highly convex, not much wider than long, base barely wider than apex. Apical angles barely produced, at apex obtuse, rather oblique, not even attaining posterior border of eyes. Apex feebly excised, slightly convex in excision, faintly bordered. Sides straigth, parallel. Margins fairly wide, chanelled, even slightly explanate, very finely bordered. Basal angles rectangular, at apex obtuse, or even slightly posteriorly produced. Base faintly convex, unbordered. Surface near base without transverse impression. Microreticulation fine and dense, distinct, puncturation not visible, surface with some extremely fine wrinkles, impilose, dull, slightly silky.

Elytra (Figs 57, 385, 536). Narrow and very elongate, cylindrical, parallel. Apex wide, transverse, truncature convex, in middle distinctly drawn in, apical angles widely rounded off. Shoulders



Figs 197a-l. *Adelotopus bacillus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally moderately wide, becoming very narrow apically, partly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 2 pores only behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation distinct, isodiametric, much coarser than on forebody, though slightly superficial and less silky, each interval with an irregular row of slightly rasp-like punctures, each of which bears a short hair, surface moderately dull, becoming less dull towards apex.

Lower surface. Prosternal process rather elongate, moderately wide, slightly convex, lower surface markedly excised in front of apex, apex wide, gently convex, passing over in an almost right angle from ventral surface, slightly setose. Metepisternum very elongate, c. 2.6 × as long as wide, in posterior third not hollowed. Abdominal sterna apparently with 1 elongate seta each side. Lower surface very sparsely punctate and shortly pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 197e-k). Genital ring moderately wide, rather triangular, fairly asymmetric, with slightly asymmetric, rather small, fairly excised base. Sternum VII moderately wide, apically oblique, with very deep excision, base excised, basal angles obtuse, lateral parts fairly short. Aedeagus elongate, depressed, in middle slightly widened, evenly narrowed to apex, faintly asymmetric. Basal part fairly short, rather bent. Lower surface gently sinuate. Apex rather wide, evenly rounded. Orifice very elongate, internal sac moderately complex, apparently without a distinct oblique fold near apex. Both parameres rather narrow and elongate, slightly triangular, with moderately rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 197l). Stylomere moderately wide, apex obliquely rounded, lateral border slightly concave, with 2-3 elongate setae at apex. Lateral plate rather elongate, with 2-3 elongate apical setae.

Variation. Due to scarce material little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. One specimen apparently collected in December.

Distribution (Fig. 630). New South Wales, northern part of Northern Territory. Certainly the range of this species is very unsufficiently known, and there may have occurred even some mislabelling.

Material examined (2). Only the holotype and the paratype.

Etymology. The name refers to the very elongate, bacillus-like body shape.

celeripes-group

Diagnosis. Medium-sized, remarkably wide, rather depressed, uniformly black species. Labrum quadrisetose; glossa c. 10-12-setose; lateral margin of pronotum explanate; basal border line of elytra almost complete, attaining almost suture, completely visible; scutellar pore present; whole lateral margin of elytra with a row of elongate setae; series of umbilical pores with 6 subhumeral pores and 1 postmedian pore; abdominal sterna with several ambulatory setae each side; sternum VI with a fringe of longer setae at apical margin; tibiae, especially metatibia not much depressed; all femora not very wide and not markedly depressed; internal sac of aedeagus fairly complicate, without distinct oblique fold near apex.

Larva. Unknown.

Distribution. A single striking species from southwestern Australia.

Systematic position. This group is rather plesiomorphic in several aspects, e.g. wide body shape, explanate lateral margins of pronotum and elytra, quadrisetose labrum, rather large number of marginal elytral setae and of abdominal setae, presence of short setae on the apical angles of the pronotum, presence of a fringe of elongate setae on the elytra. It is apomorphic, however, in the very short and wide elytra. It may be the connecting link between the *dytiscides*-group and its relatives and the *gyrinoides*-group and its relatives and is probably the adelphotaxon of all species-groups including spevcies with quadrisetose labrum.

Adelotopus celeripes Lea, 1910
Figs 58, 198, 386, 537, 630

Adelotopus celeripes Lea, 1910, p. 120, fig. 1; Notman 1925, p. 6, 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50.

Types. Lectotype (by present designation): ♂, T, 3912 *Adelotopus celeripes* Lea W. Australia, Type (SAMA). – Paralectotype: 1♂, same data, on same card (SAMA).

Type locality. From description: "Swan River", from label: Western Australia.

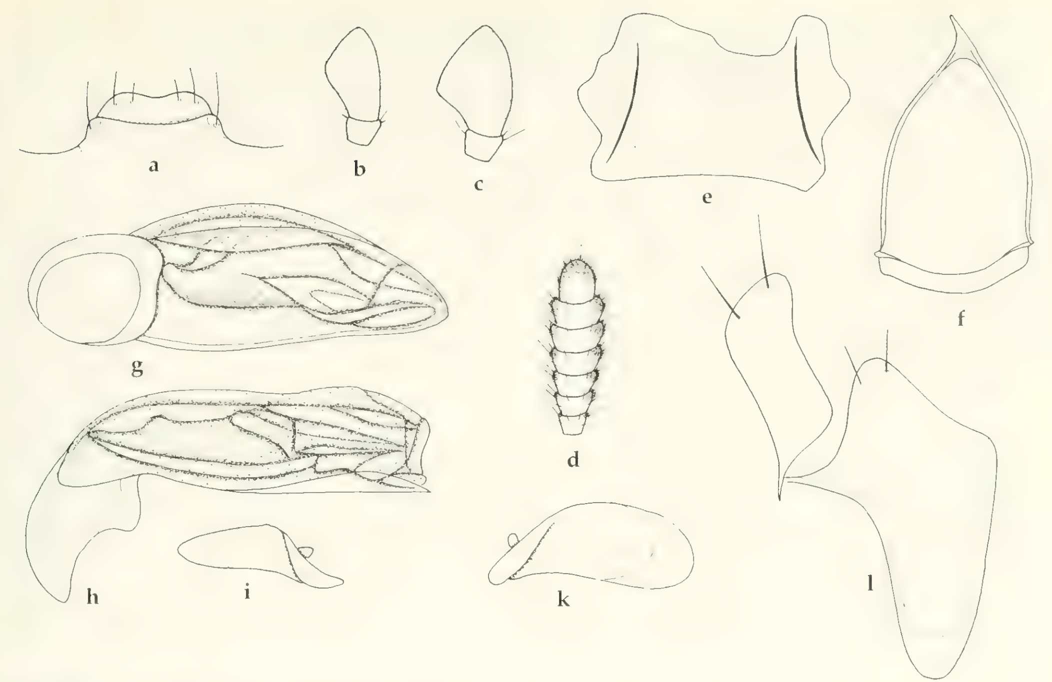
Diagnosis. Rather small, depressed, very wide, black species with wide, basally markedly rounded pronotum and almost quadrate elytra. Distinguished from all other species by this striking shape, further by the setose margin of elytra and the presence of the sutural pore.

Description

Measurements. Length: 4.3-4.8 mm. Ratios. Width/length of pronotum: 2.32-2.40; width base/apex of pronotum: 1.75-1.90; width pronotum/head: 1.83-1.97; length/width of elytra: 1.14-1.17; length elytra/pronotum: 2.70-2.80.

Colour. Glossy black. Lower surface black. Mouth parts and antenna piceous to reddish-piceous, legs piceous to almost black.

Head (Figs 198a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally faintly projecting, lateral borders almost straight. Clypeal suture in middle widely interrupted or almost absent. Labrum rather large, apex slightly concave. Antennal groove laterally not sharply bordered, latero-posteriorly without carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally and apically rounded. Glossa wide, tonguelike, apically widely rounded, ventrally with indistinct keel, at border with 10-12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly wide, slightly securiform. Terminal palpomere of labial palpus very wide, markedly



Figs 198a-l. *Adelotopus celeripes* Lea. Details of head and genitalia. For legends see fig. 100.

securiform. Antenna very short, 8th-9th antennomeres c. 2.5 × as wide as long. Microreticulation very fine, though distinct, puncturation extremely fine, difficult to detect even under high magnification, rather sparse, surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Both palpi rather densely setose, gula apparently asetose.

Pronotum (Fig. 386). Very wide, moderately depressed, base wide, apex narrow. Apical angles moderately produced, somewhat obtuse, slightly oblique, attaining posterior third of eyes. Apical angles with 1-2 short setae. Apex moderately deeply excised, slightly convex in excision, distinctly bordered. Sides markedly curved throughout, widest near basal angles. Margins rather wide, somewhat explanate, finely bordered. Basal angles evenly and widely rounded off. Base almost straight to slightly convex, finely bordered. Surface near base with very shallow, transverse impression. Microreticulation absent or almost so, even under high magnification only faint traces wisible, puncturation moderately fine to fairly coarse, distinct, dense, though somewhat irregular, surface impilose, highly glossy.

Elytra (Figs 58, 386, 537). Sort and wide, rather depressed, margins faintly convex throughout. Apex rather wide, almost transverse, truncature faintly convex, apical angles rounded off. Shoulders rounded off, basal margin slightly oblique, the whole lateral border densely set with elongate setae, margin distinctly crenulate. Marginal channel moderately wide, completely visible from above. Basal border almost complete, absent only very close to suture, ending gradually. Series of umbilical pores consisting of 6 (sometimes unilaterally 5 or 7) pores behind shoulder and 1 (rarely 2) additional pore behind middle. Setae fairly elongate. Sutural pore distinct, deep. Striae including sutural stria absent, though in apical half more or less distinctly marked by a row of larger punctures. Microreticulation absent, traces only visible near margin and near apex, puncturation dense, distinct, slightly irregular. Surface impilose, highly glossy.

Lower surface. Prosternal process rather elongate, rather narrow, gently convex, apex rather elongate, narrow, rounded, with long setae. Metepisternum very short, c. 1.3 × as long as wide, neither bent, nor hollowed. Abdominal sterna with a row of several very elongate setae. Sternum VI with a row of less elongate setae along apical border. Lower surface with moderately dense, though very elongate pilosity.

Legs. Medium-sized, tibiae not depressed, femora rather narrow and convex, tarsi short and big. 1st tarsomere of protarsus slightly shorter than wide, tibial groove of profemur fairly deep, anterior plate overlapping the groove for apical half, posterior border of groove sharp, near base only convex. Metatibia rather short, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 198e-k). Genital ring moderately wide, symmetric, arms very thin, basally parallel, with rather narrow, symmetric base. Sternum VII moderately wide, apically concave, with fairly deep excision, and very large, apically rounded part laterally of excision. Base gently concave, lateral parts short. Aedeagus short, moderately depressed, widened in middle, slightly constricted in front of apex, asymmetric. Lower surface feebly convex. Apex rather narrow, obtusely acute. Orifice rather short, internal sac fairly complex, without distinct oblique fold at apex. Both parameres rather elongate, left considerably larger than right, almost parallel, both with shortly rounded apex.

♀ genitalia (Fig. 198l). Stylomere elongate and narrow, almost trpezoidal, apex wide, oblique, with 2 subapical setae. Lateral plate short, with 2 short apical setae.

Variation. Little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. According to the description one of the type specimens "was taken from a nest of a stingless "sugar" ant, probably of the genus *Camponotus*" (Lea 1910), and the types are mounted together with two ants of the genus *Camponotus* Mayr on a card. The species was described as extremely agile. Some more recently collected specimens are mounted together with ants of the genus *Hypoclinea* Mayr (= *Dicerotoclinea*) on the same card, probably of an hitherto unknown species (Hölldobler & Wilson 1990). Another specimen is mounted with an ant of the Neotropical genus *Wasmannia* Forel on the same card. This ant genus is known to have been introduced into New Caledonia, though was so far not known from Australia (Hölldobler & Wilson 1990). Records are from June to August, October, and December.

Distribution (Fig. 630). Southwestern corner of Western Australia.

Material examined (18). **WA:** 1♂, Perth W. Australia J. Clark, Ex Coll. Donisthorpe, *Adelotopus occidentalis* Cast. (BMNH); 2♂♂, 3912 *Adelotopus celeripes* Lea, Swan River, lectotype!, paralectotype! (SAMA); 1♀, 32, Swan R. W. Australia J. Clark (SAMA); 1♀, Cannington nr. Perth, W. Australia. G. E. Bryant. 2.VIII.08, G. Bryant Coll. (BMNH); 1♂, R. P. Mcmillan Cannington 23.6.53 721, *Adelotopus celeripes* Lea (WAM 94/850-851); 2♂♂, 2♀♀, R. P. Mcmillan Cannington 9.7.53 824, 825, 826, *Adelotopus celeripes* Lea (WAM 94/852-858); 1♀, R. P. Mcmillan Cannington 10.10.53 1235 (CBM, WAM 94/859); 2♂♂, 1♀, *Adelotopus celeripes* Lea R. P. Mcmillan Cannington Dec.4.53 1323 (WAM 94/860-862); 2♀♀, R. P. Mcmillan Mt. Pleasant 16.8.53, 29.8.1953, 1026, 1035 (WAM 94/863-864); 1♀, 46-2151 Yallingup (WAM); 1♀, *Adelotopus* sp. Salt River, W.A. K12396, *Adelotopus celeripes* Lea Id by C. Oke, *A. cylindricus* (AMS); 1♀, 30789, De Boulay, Nov. Holl. Occid. (BMNH).

gyrinoides-group

Diagnosis. Medium-sized to rather small, fairly wide, fairly depressed, black species or black species with distinct reddish apex or with other pattern. Labrum quadrisetose; glossa c. 16-setose; lateral margin of pronotum rather explanate, basal border convex; basal border line of elytra abbreviated, reaching halfways to suture or less; scutellar pore generally absent, but present in two species; lateral margin of elytra without elongate setae; series of umbilical pores with 4-5, rarely up to 7 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; internal sac of aedeagus complicate, without an oblique fold near apex.

Larvae. 1st instar larvae known of 8 species.

Distribution. 17 species and additional 3 subspecies, mainly in eastern Australia from eastern South Australia to northeastern Queensland, and Tasmania, but single species also in southwestern Australia and in New Guinea.

Systematic position. This group is plesiomorphic in the quadrisetose labrum, presence of the scutellar pore in some species, rather wide, depressed shape, somewhat explanate lateral margins of the pronotum, and absence of an oblique fold in the apex of the internal sac of the aedeagus. However,

it is apomorphic in the presence of pattern in some species, the large number of glossal setae, abbreviated basal border and small number of umbilical pores of the elytra, small number of setae on the abdomen, and complicate structure of the internal sac of the aedeagus. The group is thus a mixture of plesiomorphic and apomorphic character states and may be related to the more apomorphic *punctulifer-* and *analis*-groups.

Adelotopus gyrinoides Hope, 1834

This species occurs apparently in a western and an eastern subspecies, because there are two female specimens from Victoria and New South Wales that are externally very similar to the Western Australian main population, but differ significantly in the shape of the stylomeres. Unfortunately and quite surprisingly, no ♂♂, altogether no additional specimens are available. Hence the matter is somewhat doubtful. Im am quite sure, however, that at least the Victorian specimen, collected by Oke, has not been mislabelled. It seem best to maintain for the present a slightly puzzling eastern subspecies.

Diagnosis. Rather small to medium sized, fairly wide, rather depressed, piceous-black species. Distinguished from related species by the slightly rasp-like puncturation on the elytra, rather glossy surface, absence of scutellar pore, short aedeagus with acute apex, acute basal angles of ♂ sternum VII, apically widely rounded stylomere with straight lateral margin, and elongate lateral plate.

Adelotopus gyrinoides gyrinoides Hope, 1834
Figs 199, 387, 538, 631

Adelotopus gyrinoides Hope, 1834, p. 11, t. 1, fig. 1; Westwood 1837, p. 412; 1853, p. 403, pl. 14, fig. 1; Newman 1842, p. 365; Germar 1848, p. 170; Lacordaire 1854, p. 154; Gestro 1884, p. 303; Macleay 1871, p. 94; Notman 1925, p. 7, 10, 28; Csiki 1933, p. 1635; Moore 1963, p. 444; Moore et al. 1987, p. 50.

Adelotopus occidentalis Castelnau, 1867, p. 31; 1868, p. 117; Sloane 1898, p. 514; Notman 1925, p. 7, 10, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52 (**new synonymy**).

Adelotopus brunneus Castelnau, 1867, p. 33; 1868, p. 119; Notman 1925, p. 7, 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 50 (**new synonymy**).

Types. Of *gyrinoides*. Lectotype (by present designation): ♀, *gyrinoides* Hope N. Holl. Type. Trans. Ent. Soc. V. 21. p XI. *Adelotopus* Hope, Type Col: 22 *Adelotopus gyrinoides* Hope (OUM).

Of *occidentalis*. Lectotype (by present designation): ♂, Swan River Coll. Castelnau, Swan riv., *occidentalis* Cast. 428, Holotypus *Adelotopus occidentalis* Castelnau, 1867 (MCSN).

Of *brunneus*. Lectotype (by present designation): ♂, Swan River Coll. Castelnau, Swan riv., *brunneus* Cast. Swan riv., Holotypus *Adelotopus brunneus* Castelnau, 1867 (MCSN).

Type localities. Of *gyrinoides* (from description): "Swan River", Western Australia. – Of *occidentalis*: "Swan River", Western Australia. – Of *brunneus*: "Swan River", Western Australia.

Diagnosis. Distinguished from the eastern subspecies *A. gyrinoides orientalis*, subspec. nov. and from the most closely related *A. mainae*, spec. nov. by the short, and wide, apically widely rounded stylomere and the reduced microreticulation of the elytra that is combined with dense puncturation and rather glossy surface.

Description

Measurements. Length: 4.3-6.2 mm. Ratios. Width/length of pronotum: 1.65-1.76; width base/apex of pronotum: 1.54-1.72; width pronotum/head: 1.64-1.77; length/width of elytra: 1.46-1.50; length elytra/pronotum: 2.45-2.66.

Colour. Piceous to piceous-black, margins of pronotum and elytra reddish translucent. Lower surface reddish-piceous. Mouth parts, antennae, and legs reddish-piceous.

Head (Figs 199a-d). Rather short and wide, moderately depressed. Anterior border laterally gently oblique, in middle transverse, lateral angle rounded, laterally not projecting, lateral borders even faintly widened behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply

bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rounded off. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation fine, distinct, though slightly superficial, puncturation rather fine, moderately dense. Surface with a shallow sulcus medially of eyes, sometimes with faint wrinkles, impilose or frons with very few, faint hairs, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 387). Rather wide, moderately convex, base fairly wide, moderately narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex rather excised, slightly convex in excision, faintly and somewhat irregularly bordered. Sides evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles more or less widely rounded off. Base slightly convex, faintly bordered. Surface near base with shallow transverse impression. Microreticulation highly superficial to almost absent, puncturation rather fine, fairly dense, of variable size, surface extremely sparsely pilose, pilosity very difficult to detect, glossy.

Elytra (Figs 387, 538). Rather wide, fairly depressed on disk, in basal half parallel, faintly widened behind middle, then narrowed to apex. Apex moderately wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though at in basal half slightly wider and even widened at middle, partly concealed. Basal border incomplete, reaching to about middle between lateral border and suture. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation highly superficial to almost absent, difficult to detect, puncturation moderately fine and of slightly varying size, dense, somewhat rasp-like, surface extremely sparsely pilose, pilosity very difficult to detect, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, slightly convex, apex moderately wide, gently convex, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather densely punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 199e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather narrow, apically regularly convex, with fairly deep excision, basally rather deeply excised, basaly angles sharp, rectangular, lateral parts rather short. Aedeagus rather short, depressed, in middle markedly widened, symmetric. Lower surface almost straight to gently convex. Apex narrow, acute. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres at apex widely rounded, right paramere rather narrow, left paramere considerably larger than right.

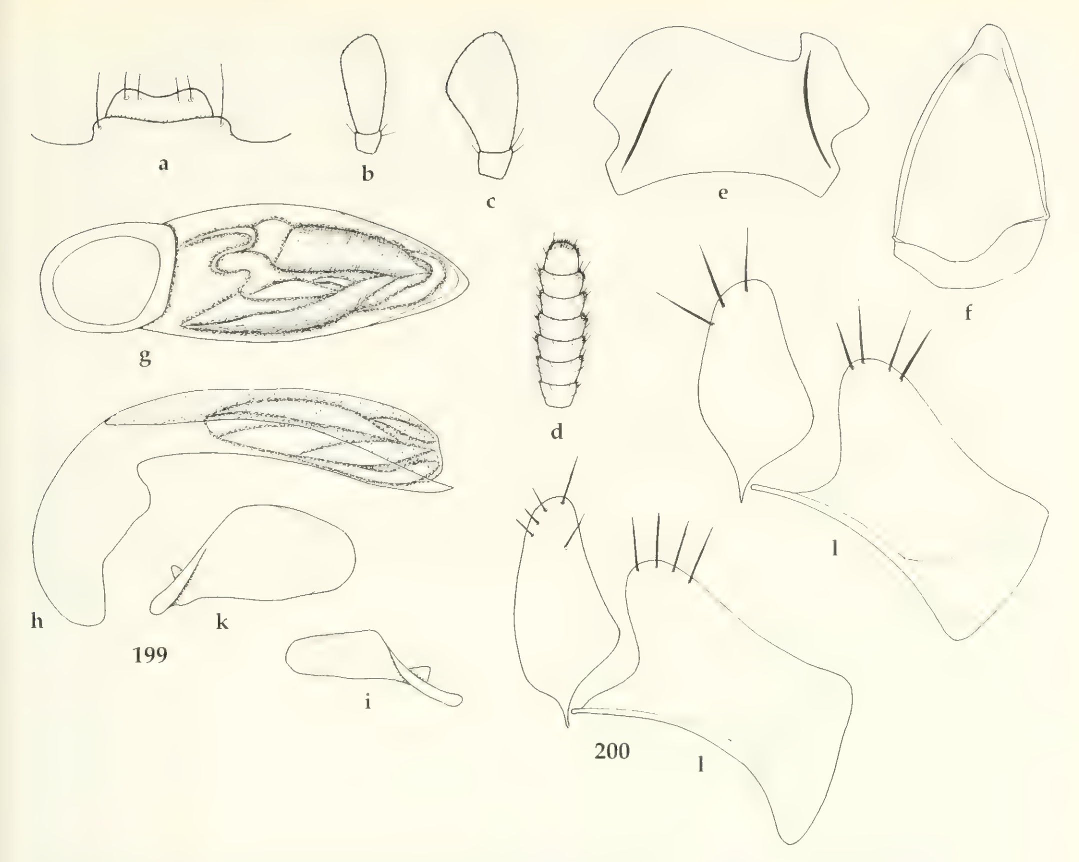
♀ genitalia (Fig. 199l). Stylomere short and wide, apex widely rounded, with 2-4 elongate subapical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. Considerably variation noted in size and in relative width of pronotum which tends to be relatively wider in large specimens, some variation also noted in degree of microreticulation and pilosity.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of gum-like eucalypts, one specimen in "flight intercept trap with trough". Dated specimens captured during the period from October to February, and in April and May. Two specimens are mounted with ants of the species *Iridomyrmex conifer* Forel on the same card.

Distribution (Fig. 631). Southwestern Australia.



Figs 199a-l. *Adelotopus gyrinoides gyrinoides* Hope. Details of head and genitalia. For legends see fig. 100.
Fig. 200l. *Adelotopus gyrinoides orientalis*, subspec. nov. ♀ genitalia.

Material examined (59). **WA:** 1♂, *A. gyrinoides* Hope = *occidentalis* Cast. ? = *brunneus* Cast. Madeo..(?), 22.II.14 S. Perth Giles (ANIC); 1♂, South Perth, H. M. Giles, Ex coll. T. Sloane, *Adelotopus gyrinoides* Hope ? = ? *occidentalis* Cast. = *brunneus* Cast. Id. by T. G. Sloane, *Adelotpus gyrinoides* Hope Compared with type H. E. A., H. E. Andrewes Coll. 1945 (BMNH); 1♂, 2♀♀, 4.I.04, 41. South Perth, H. M. Giles (ANIC); 1 (sex?), S. Perth, H. M. Giles, *Adelotopus gyrinoides* Hope. Compared with type H.E.A. (ANIC); 3♂♂, 1 (sex?), Swan R., *Adelotopus occidentalis* Cast. Id. by A. M. Lea (SAMA); 1♂, Swan River Coll. Castelnau, Swan riv., *occidentalis* Cast. 428, lectotype *occidentalis*! (MCSN); 1♂, Swan River Coll. Castelnau, Swan riv., *brunneus* Cast. Swan riv., lectotype *brunneus*! (MCSN); 2♀♀, Swan R. J. Clark (ANIC); 1♂, 3♀♀, Swan R. (SAMA); 1♀, Swan R. (QMB); 6♂♂, 4♀♀, Rockingham IV.54, VII.54, leg. H. Demarz, *Adelotopus gyrinoides* Hope Det. B. P. Moore'62 (CBM, CMC, FMT, ZSM); 2♂♂, Parkerville J. Clark, Parkerville, WA. 1919-203, Inquiline (WAM); 1♂, WA 110, Treenbrook For. 5 km nw. Pemberton, 2.-3.XII.1987, M. Baehr (CBM); 1♀, 34.59S 116.44E, Coalmine Bch, Walpole Nornalup NP 25.X.-3.XI. 1984, J. & N. Lawrence (ANIC); 1♂, Mt. Barker, *occidentalis* 38, 3901, *Adelotopus occidentalis* Cast. (SAMA); 1♂, 1♀, Albany (OUM); 1♂, Albany Brewer (OUM); 2♂♂, Albany (MNHN); 1♀, K 12230, *Adelotopus occidentalis* Castel. K. G. Sound (AMS); 1♂, 1♀, K. George Sound, Ex Museo H. W. Bates (MNHN); 1♂, Kg. Geo. Sound. Janson Acq. (MNHN); 2♀♀, K. G. Sound (MMS); 2♂♂, 1♀, WA 91, Stirling Range, Bluff Knoll Rd. 250 m, 26.XI.1987, M. Baehr (CBM); 1♀ (fragment), K.G.S., Pascoe Coll. (BMNH); 1♀, Bridgetown, ac. 23246, *occidentalis* Cast. (AMNH); 1♂, (34.44S 116.15E) Thus River, W.A., 6.V.1971, Upton & Mitchell (ANIC); 1♂, Champion Bay, Pascoe Coll (BMNH); . – **Aus:** 1♀, N.W. n. Holl., Janson Acq. (MNHN); 1♂, *Adelotopus gyrinoides* Hope Trans. Ent. Soc. Lond. I.12.t.1.p.1 (BMNH); 1♀, 1084, Priesl (?) *gyrinoides* Hope Australia (MNHB); . – **?:** 1♀, *Adelotopus gyrinoides* Hope, lectotype! (OUM); 1♀, *Adelotopus occidentalis* Cast. Id. by A. M. Lea (QMB); 1♀, K 12230, *A. occidentalis* (AMS); 1♂, H. J. Carter Coll. No locality., *Adelotopus gyrinoides* Hope = *A. occidentalis* Cast. Det. Sloane 266, Agrees with Key (NMV); 1♂, 53 50, det. *gyrinoides* (BMNH).

Adelotopus gyrinoides orientalis, subspec. nov.

Figs 59, 200, 388, 539, 631

Types. Holotype: ♀, Wallan, Vic. C. Oke, *Adelotopus gyrinoides* Hope (NMV). – Paratype: 1♀, N. S. Wales, *Adelotopus politus* Cast. Id. by T. G. Sloane (CBM).

Diagnosis. Subspecies distinguished from the nominate western subspecies *A. g. gyrinoides* by piceous colour, distinct microreticulation, far less dense puncturation of elytra, and the longer and narrower stylomere.

Description

Measurements. Length: 5.5-5.8 mm. Ratios. Width/length of pronotum: 1.75-1.77; width base/apex of pronotum: 1.60-1.64; width pronotum/head: 1.72-1.74; length/width of elytra: 1.48-1.52; length elytra/pronotum: 2.56-2.69.

Colour. Piceous, margins of pronotum and elytra reddish translucent. Lower surface reddish-piceous. Mouth parts, antennae, and legs reddish-piceous.

Head. Very similar to nominate subspecies, but microreticulation distinct, not very superficial, puncturation but moderately dense, surface with some very faint hairs on frons, moderately dull.

Pronotum (Fig. 388). Very similar to nominate subspecies, microreticulation rather superficial, but puncturation rather sparse, surface sparsely pilose, moderately glossy.

Elytra (Figs 59, 388, 539). Very similar to nominate subspecies, but microreticulation distinct, though somewhat superficial, and puncturation but moderately dense, surface extremely sparsely pilose, moderately glossy.

Lower surface. Very similar to nominate subspecies.

Legs. Very similar to nominate subspecies.

♂ genitalia. Unknown.

♀ genitalia (Fig. 200l). Stylomere rather narrow, fairly elongate, apex widely rounded, with 2-5 elongate subapical setae. Lateral plate elongate, with 4 elongate apical setae.

Variation. Little noted, apart from some differences of the relative length of the elytra and the length of the stylomere.

Vivipary. Not confirmed in the examined material.

Habits. Unknown.

Distribution (Fig. 631). Southern central Victoria, perhaps southeastern New South Wales. Distribution little known, because the paratype is only labelled "N. S. Wales".

Material examined (2). Only the holotype and one paratype.

Etymology. The name refers to the eastern range of this subspecies.

Adelotopus mainae, spec. nov.

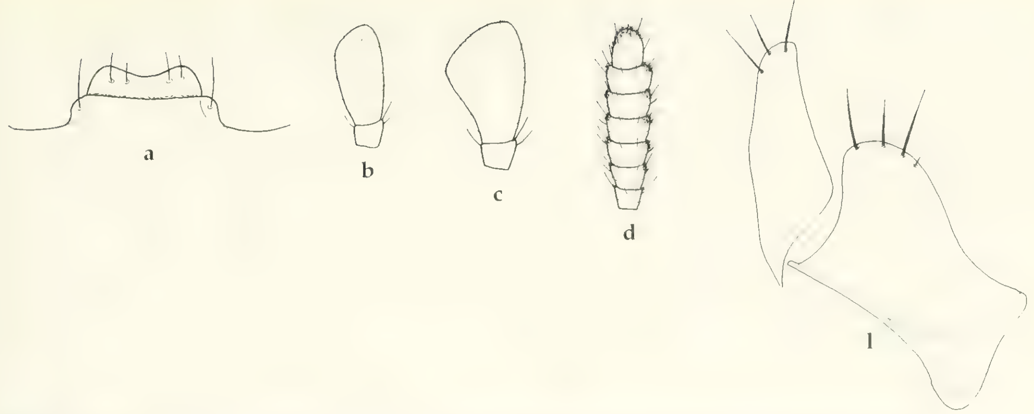
Figs 201, 389, 540, 632

Types. Holotype: ♀, Melaleuca Park 12 km NE of Wanneroo Western Australia 4 April 1982 T. F. Houston 443 (WAM 87/2178). – Paratype: 1♀, Australia WA Thorbay, 30 km w. Albany, 4.2.1994, B. Baehr (CBM).

Diagnosis. Rather small to medium sized, fairly wide, rather depressed, piceous-black species. Distinguished from related species by the slightly rasp-like puncturation on the elytra, rather glossy surface, absence of scutellar pore, narrow and elongate stylomere, and elongate lateral plate. Further distinguished from the closely related *A. gyrinoides gyronoides* Hope of the same area by presence of microreticulation on the elytra.

Description

Measurements. Length: 5.0-5.4 mm. Ratios. Width/length of pronotum: 1.68-1.74; width base/apex of pronotum: 1.56-1.60; width pronotum/head: 1.68-1.71; length/width of elytra: 1.42-1.46; length elytra/pronotum: 2.60-2.63.



Figs 201a-d, l. *Adelotopus mainae*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Colour. Black, margins of pronotum widely reddish translucent. Lower surface dark piceous, only terminal abdominal segment slightly lighter. Mouth parts, antennae, and legs piceous, tibiae blackish-piceous.

Head (Figs 201a-d). Rather short and wide, moderately depressed. Anterior border laterally gently oblique, in middle transverse, lateral angle rounded, laterally not projecting, lateral borders straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rounded off. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation fine, distinct, though slightly superficial, puncturation very fine, moderately dense, rather difficult to detect within microreticulation. Surface with a shallow sulcus medially of eyes, sometimes with faint wrinkles, apparently impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 389). Rather wide, moderately convex, base fairly wide, moderately narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex rather excised, slightly convex in excision, distinctly bordered. Sides evenly curved throughout, widest in basal third, slightly narrowed to base. Margins rather wide, slightly explanate, faintly bordered. Basal angles rather shortly rounded off. Base slightly convex, faintly bordered. Surface near base with shallow transverse impression. Microreticulation somewhat superficial, puncturation rather fine, fairly sparse, of variable size, surface sparsely pilose, pilosity fairly distinct, moderately glossy.

Elytra (Figs 389, 540). Rather wide, fairly depressed on disk, in basal half parallel, then narrowed to apex. Apex moderately wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though at in basal half slightly wider, partly concealed. Basal border incomplete, reaching to about middle between lateral border and suture. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation distinct, though slightly superficial, puncturation moderately fine, moderately sparse, somewhat rasp-like, surface sparsely pilose, pilosity fairly distinct, moderately dull.

Lower surface. Prosternal process rather elongate, moderately wide, slightly convex, apex moderately wide, gently convex, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather densely punctate and pilose.

Legs. Moderately elongate, 1st tarsomere of protarsus almost as long as wide, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia. Unknown.

♀ genitalia (Fig. 2011). Stylomere very narrow, remarkably elongate, apex shortly, slightly obliquely rounded, with 3 elongate subapical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. Very little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Paratype collected under bark of Karri (*Eucalyptus diversicolor*). Thus far captured in February and April.

Distribution (Fig. 632). Southwestern Australia.

Material examined (2). Only the holotype and one paratype.

Etymology. Named in honour of the Barbara York Main, well known specialist of Australian spiders, on her property the paratype was collected.

Adelotopus vicinus Castelnau, 1867

Figs 202, 390, 541, 631

Adelotopus vicinus Castelnau, 1867, p. 31; 1868, p. 117; Blackburn 1901a, p. 19; Notman 1925, p. 7, 30; Csiki 1933, p. 1636; Moore et al. 1987, p. 53.

Types. Lectotype (by present designation): ♂, Sydney Coll. Castelnau, Sydney, *vicinus* Cast., Holotypus *Adelotopus vicinus* Castelnau, 1867 (MCSN).

Type locality: "Sydney", New South Wales.

Diagnosis. Rather small, fairly wide, rather depressed, piceous-black species. Distinguished from all related species except for *A. dubius*, spec. nov. by the presence of the scutellar pore. Distinguished from *A. dubius* by longer elytra and absence of a distinct reddish apex of the elytra.

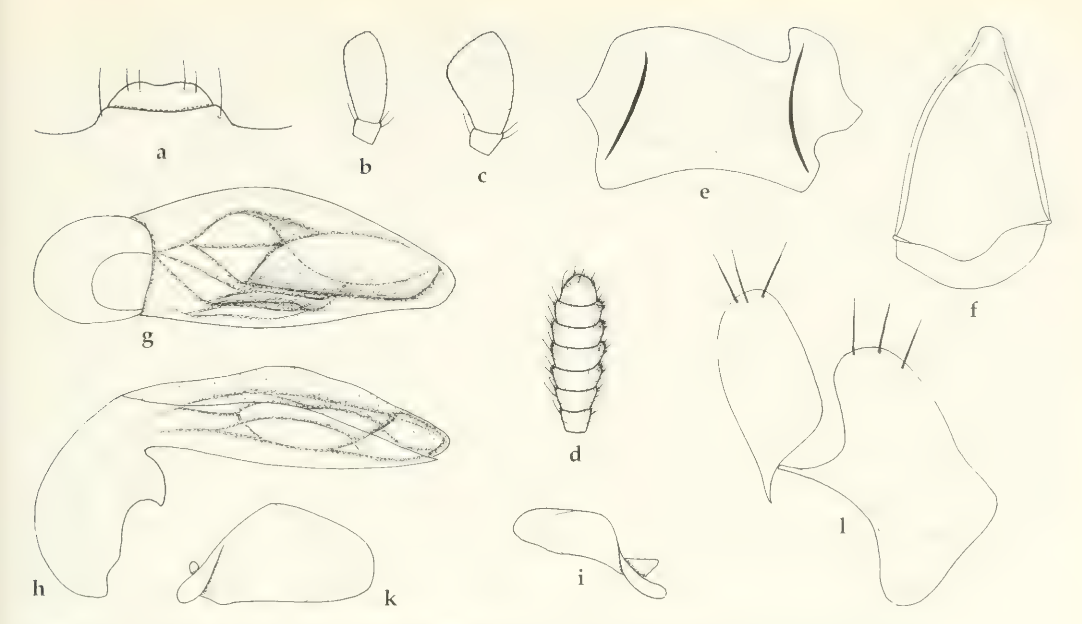
Description

Measurements. Length: 4.3-5.0 mm. Ratios. Width/length of pronotum: 1.56-1.65; width base/apex of pronotum: 1.47-1.53; width pronotum/head: 1.56-1.65; length/width of elytra: 1.50-1.55; length elytra/pronotum: 2.52-2.72.

Colour. Piceous to piceous-black, margins of pronotum and elytra reddish translucent. Lower surface reddish-piceous. Mouth parts, antennae, and legs reddish-piceous, sometimes tibiae and tarsi slightly darker.

Head (Figs 202a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders even faintly widened behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres slightly <2 × as wide as long. Microreticulation fine, distinct, though slightly superficial, puncturation rather fine, moderately dense. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 390). Rather wide, moderately convex, base fairly wide, moderately narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered.



Figs 202a-l. *Adelotopus vicinus* Castelnau. Details of head and genitalia. For legends see fig. 100.

Sides evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles rather widely rounded off. Base slightly convex, faintly bordered. Surface near base with shallow transverse impression. Microreticulation present, though superficial, puncturation rather fine, rather dense, surface only laterally extremely sparsely pilose, pilosity very difficult to detect, rather glossy.

Elytra (Figs 390, 541). Rather wide, fairly depressed on disk, in basal half parallel, faintly widened behind middle, then narrowed to apex. Apex moderately wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though at in basal half slightly wider and even widened at middle, partly concealed. Basal border incomplete, reaching to about middle between lateral border and suture. Lateral border asetose. Scutellar pore present. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine and of slightly varying size, moderately dense, not at all rasp-like, surface almost impilose, sometimes few tiny hairs visible at lateral borders under high magnification, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, straight, apex rather wide, gently convex, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather densely punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 202e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII moderately wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles obtuse, lateral parts rather short. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface almost straight to gently convex. Apex moderately wide, evenly rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres at apex widely rounded, right paramere rather narrow, left paramere considerably larger than right.

♀ genitalia (Fig. 2021). Stylomere very wide, apex widely rounded, lateral border straight, with 2-4 elongate subapical setae. Lateral plate moderately elongate, with 3-5 elongate apical setae.

Variation. Some variation noted in size and in relative width of pronotum and elytra, the smaller specimens tend to have rather narrow pronotum.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens have been collected in "Wet. Scler." and "Dry Sclerophyll Eucalyptus forest MT", on "eucalp.", and "under logs". Dated specimens captured from November to March, in June, and September.

Distribution (Fig. 631). Australian Capital Territory, southern New South Wales north to Blue Mountains.

Material examined (26). **ACT:** 1♀, Blundell Ck. Rd., 8.I.1989, J. Bell (UVB). – **NSW:** 3♂♂, SW/Bega Myrtle Mt., 26.II.1989, J&R. Bell (CBM, UVB); 1♀, "Calosoma" via Gundaroo, 1.XII.88 B. P. Moore (CMC); 1♀, Vicinity of Jenolan Caves, J. C. Wiburd (SAMA); 1♀, Jenolan, H. J. C. 4.IX.23 (ANIC); 1♀, Jenolan (SAMA); 1♂, Sydney Coll. Castelnau, *vicinus* Cast., lectotype! (MCSN).1♂, 1♀, Sydney (MMS); 1♀, Sydney, Lea, 28f (?) (ANIC); 1♀, Hornsby N. Sydney, G. E. Bryant, 3.IX.08, G. Bryant Coll. 1919, det. *gyrinoides* (BMNH); 2♂♂, 2♀♀, Blackheath Blue Mts, 18.VI.'32, 3000 ft., Australia Harvard Exp. Darlington, *Adelotopus gyrinoides* Hope (CBM, MCZ); 1♂, Blue Mts, G. E. Bryant 4.I.09, G. Bryant Coll. 1919, det. *gyrinoides* (BMNH); 1♀, Oxford, 4.III.1972, D. A. Doolan, D. A. Doolan Coll. (AMS); 1♀, 5 km NE Nerriga, 24.I.-4.II.1984, C. Masner, 600 m (UASM); 1♂, Exeter HJC XII.37 (ANIC); 1♂, Mt. Royal Rng., Gologlie picnic area, 6.XI.1982, J. & E. Doyen (ANIC); 1♂, Washpool Nat. Pk. Granite Picnic Area 27.II.1989, 950m H. & A. Howden (NMO); 1♂, Rope's Ck. (MMS). – **?:** 1♂, Mt. Alidade Wet. Scler. 18.XI.78, *Adelotopus* sp. det. G. Williams, det. *scolytides* (AMS); 1♂, Culoni R.. Site 2, 28.XI.78, *Adelotopus* sp. det. G. Williams, det. *scolytides* (AMS).

Adelotopus dubius, spec. nov.

This is apparently a very variable species that includes certain forms which differ more or less markedly from the main body of the species. Some of these forms which seem to build rather stable, geographic populations, are herewith described as subspecies. This procedure, however, has been chosen mainly for heuristic purposes, because it is at present very difficult to decide, whether the rather clear differences are due to high intraspecific variability of *A. dubius*, spec. nov., whether they are due to the existence of several local forms that constitute well defined subspecies or even species. I prefer to describe them rather as subspecies, because they seem to occupy geographically limited areas.

Previously this species has been commonly identified as *A. scolytides* Newman, a doubtful species which has been controversely discussed in the literature, because the types are presumably lost (see discussion under "Doubtful species"). The original description of *A. scolytides* is very inaccurate, especially with regard to the degree of which the apex of the elytra is reddish, therefore the questions, whith which subspecies of *A. dubius*, spec. nov. *A. scolytides* would be conspecific, or whether *A. scolytides* would be at all referable to *A. dubius*, spec. nov. are at present not solvable.

Diagnosis. This species is distinguished from all similar species except for *A. vicinus* Castelnau by the presence of the scutellar pore. From *A. vicinus* it is distinguished by shorter elytra and usually more or less distinct reddish apex of elytra.

Adelotopus dubius dubius, subspec. nov.

Figs 203, 391, 542, 632

Types. Holotype: ♂, 35.22 S 148.50 E, Blundells Ck., 3 km E of Picadilly Circus, 850 m, ACT Feb. 1985, Weir, Lawrence, Johnson (ANIC). – Paratypes: 1♀, Launceston, Tas. C. Oke Jan. 1941, *Adelotopus scolytides* Newm. var. (NMV); 1♀, Launceston, Tasmania 91-88., *Adelotopus scolytides* Newm. (FMT); 3♂♂, Tomahawk River, ne. Tas, Austr. 11.1972, M. Baehr, *Adelotopus scolytides* Newm. (CBM); 1♂, Australia: Blue Tiers Tas: 22.X.1983 G. & P. Bornemissza (DPIM); 1♀, SW Tasmania, Lower Gordon R., 42.54S, 145,54E, Howard, Hill, H. E. C. Survey 12 L.1900, Feb. 1978, handpicking, *Adelotopus scolytides* Newm. det. B. P. Moore'79 (CMC); 1♀, Patrick Riv. Tas, Jan 1933 F. E. Wilson, (? ?), F. E. Wilson Collection, *A. tasmaniae* (NMV); 1♂, Strahan, *Adelotopus scolytides* Newm.

? Id. by T. G. Sloane (SAMA); 1♀, Zeehan, *Adelotopus scolytides* Newm. Id. by T. G. Sloane (SAMA); 1♂, Dover Aug. 1901 *Eucalyptus*, Griffith Coll. Id. by A. M. Lea, *Adelotopus hydrobioides* Westw. Tas. 225 (SAMA); 1♀, Sandford T., Griffith Coll. Id. by A. M. Lea (SAMA); 1♂, Parattah, Tas: Lea, Lea's (SAMA); 1♂, Crossing Riv., S.W. Tas. 6.2.1966 Neboiss (NMV); 1♀, Rhynchaeta (?) Tas: Lea, *Adelotopus scolytides* N. Tasmania = *haemorrhoidalis* Er. r. Blkb. (SAMA); 1♀, *Adelotopus haemorroidalis* Erichs. Tasman (OUM); 1♀, Tasmania A. Simson, *Adelotopus scolytides* Newm. Id. by T. G. Sloane, *Adelotopus scolytides* Newm. Tasmania and variety (SAMA); 1♂, 1♀, 48993, Simson, Tasm.[a], *Adelotopus haemorrhoidalis* Erichs., det. *scolytides*, Fry Coll. 1905-100 (BMNH); 1 (sex ?), Tas., 2611, *Adelotopus scolytides* Newm. ? var.? Id. by T. G. Sloane (SAMA); 1♀, Tasmania, Lea's, *Adelotopus scolytides* Newm. ? Id. by T. G. Sloane (SAMA); 1♂, Tasmania (MMS); 1♂, Vic, Gunmark Rd. SW Bendoc, 20-I-1987, P. A. Meyer coll. (CBM); 1♂, 1♀, Inverleigh, Vic. 8. Sept. 1964 C. Oke (NMV); 2♂♂, 2♀♀, Healesville, V. Jan. 1940, C. Oke, *Adelotopus scolytides* Newm. (NMV); 2♂♂, 2♀♀, Harrietville, Vic 24.4.50, C. Oke (NMV); 1♀, Vic, Jn. Mt. Selwyn & Selwan Ck. Rds. S. Porepunkah, 9-VI-1986, P. A. Meyer coll. (CBM); 1♂, 1♀, Omeo, V, Apr.57 Darlingtons, det. *apicalis* (MCZ); 1♂, VIC. 12 km W. Omeo, 1050 m, II-7-83, J. Doyen (CUIC); 1♂, Australia: Mt. Donna Buang, Vict. 21.XI.59, B. P. Moore (CMC); 1♂, Victoria, E. Base Mt. Buffalo, 250 m, 12-XII-1962 E. S. Ross & D. Q. Cavagnaro (CAS); 1♀, Mt. Buffalo, 8-22-35 Aus., O. H. Sweezy collector (BMH); 2♂♂, Mt. Macedon No. Ejnar Fischer, *Adelotopus scolytides* Newm., F. E. Wilson Collection, Setig. punct. Each side of scutellum (NMV); 1♂, Vic, Lock Creek 9 km W of Buldah, 37.14'S 149.03'E, 8 Jan 1982 ANZSES Expedition, *Adelotopus scolytides* Newm. (NMV); 1♀, Dividing Rge. V. Blackb's Coll. *Adelotopus scolytides* Newm. ? Id. by T. G. Sloane, *Adelotopus Scolytides* Newm. Tasmania and variety, Buff. (SAMA); 1♂, Rosebud, Vic Oct. 1943, C. Oke, *Adelotopus scolytides* Newm., *A. scolytides* (NMV); 1♂, Victoria Coll. Castelnau, *Scolytides* ? New. Victoria (MCSN); 1♂, *Adelotopus scolytides* Newm. Ento Victo. Adelaide, 38, Howitt Coll., det. *A. paroensis* (NMV); 1♀, Australia: NSW 5 km E. Thredbo, 1200 m, 19.X.1963, J. Sedlacek Collector (BMH); 1♀ (?); Australia: Tumut R., NSW, 1450 m, 20.2.1956 J. Sedlacek (CSB); 1♀, Australia: Tumut R., NSW I.1956, J. Sedlacek (CSB); 1♂, 1♀, The Creel Mt. Kosc., 8000 ft, dec 15'31 N.S.W., Australia Harvard Exp. Darlington, *Adelotopus apicalis* ? Macl. (MCZ); 1♂ (?), 1♀, Australia N.S.W. Snowy Plains 30-12-1969 W. J. M. Vestjens (NMV); 1♂, Canberra F.C.T. 1.11.29, G. F. Hill (ANIC); 1♀, Blundells Ck. Rd., Brindabella Rng. ACT, 21 Dec. 1984, J. F. Lawrence (ANIC); 2♂♂, 2♀♀, Blundells Ck. Rd., 850 m, ACT, 3,5 km E Picadilly Circus, 6 Feb. 1983, 18 Nov. 1984, J. F. Lawrence (ANIC); 1♀, ACT, Brindabella Rge, Blundells Ck 850 m, I-27/28-83 J.T. Doyen, *Adelotopus apicalis* Macleay det. J. Liebherr 1987 (CUIC); 1♂, 2♀♀, 35.22S, 148.48E, Picadilly Circus, 1240 m, ACT Mar.84, J. Lawrence, T. Weir, M. L. Johnson coll. (ANIC); 1♂, Picadilly Circ. Brindabella Rng. ACT, 22 Nov.1982, J. & N. Lawrence (ANIC); 1♂, Australia: Picadilly Circus, A.C.T. 30.III.63, B. P. Moore (CMC); 5♂♂, 35.19 S, 148.51 E, Wombat Ck. 6 km NE of Picadilly Circus, 750 m, ACT Feb. 1985, Weir, Lawrence, Johnson (ANIC); 1♀, Brindabella Range, A.C.T. 27 Jan. 1975, Collr. A & M Walford-Huggins, *Adelotopus scolytides* Newm. det. B. P. Moore'86 (CMP-WHC); 1♂, Lee's Spring F.C.T. 19.2.32, G. F. Hill (ANIC); 1♀, Sydney (SAMA); 1♀, Australia N S Wales, env. Canberra, Bendare Dam 30.VII.1968, /No. Can.-R.1./leg. by I. Loksa (HNMB); 2♂♂, 3♀♀, 35.05S, 150.18E, Kioloa SF 15 km N. of Batemans Bay, NSW, Dec. 86, Jan. 87, M. G. Robinson (ANIC, CBM); 1♀, Australia, NSW, 1909 DEANE, *Adelotopus*, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, Australia: Mt. Tamborine, Q. 5.7.63, B. P. Moore (CMC); 1♀, V. de Poll, *hydrobioides* (West) Australia (ANIC); 1♀, *hydrobioides* Castel., Ex Musaeo Mniszech, det. *haemorrhoidalis* Westwood (MNHN); 1♂, V. D. Ld. 77.19, det *scolytides* (BMNH); 1♀, V. de Poll, Ex coll. T. Sloane, *Adelotopus scolytides* Newm. Id. by T. G. Sloane, H. E. Andrewes Coll. B. M. 1945-97 (BMNH); 1♂, *Adelotopus scolytides* Newm. ? var.? Id. by T. G. Sloane (ANIC).

Diagnosis. Subspecies distinguished from both other subspecies by generally lesser size, usually not clearly delimited red apex of elytra, narrower pronotum, usually with wider and more chanelled lateral margins and less widely rounded basal angles, dense puncturation especially on the elytra, and usually presence of traces at least of microreticulation on the elytra that makes the surface less glossy.

Description

Measurements. Length: 4.3-5.2 mm. Ratios. Width/length of pronotum: 1.63-1.74; width base/apex of pronotum: 1.56-1.63; width pronotum/head: 1.64-1.72; length/width of elytra: 1.46-1.52; length elytra/pronotum: 2.63-2.70.

Colour (Fig. 391). Piceous-black to black, margins of pronotum and elytra ususally conspicuously reddish translucent. Apex of elytra more or less widely reddish, though ususally not very well limited, sometimes only very narrowly reddish translucent. Lower surface of head and thorax piceous or reddish-piceous, abdomen reddish. Mouth parts and antennae reddish or reddish-piceous, legs more or less light reddish, tibiae and tarsi distinctly darker.

Head (Fig. 203a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders even faintly widened behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex

slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, distinct, though slightly superficial, puncturation rather fine, moderately dense. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 391). Moderately wide, moderately convex, disk rather depressed, base fairly wide, moderately narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered. Sides evenly curved throughout, widest near base. Margins rather wide, slightly explanate, rather chanelled, faintly bordered. Basal angles rather widely rounded off. Base straight to slightly convex, faintly bordered. Surface near base with shallow transverse impression. Microreticulation present, though superficial, puncturation moderately fine, rather dense, sometimes slightly rugose, surface more or less distinctly, though sparsely pilose, pilosity sometimes difficult to detect, rather glossy.

Elytra (Figs 391, 542). Rather wide, fairly depressed on disk, in basal half parallel, faintly widened behind middle, then narrowed to apex. Apex moderately wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though at in basal half slightly wider and even widened at middle, partly concealed. Basal border incomplete, reaching to less than middle of border. Lateral border asetose. Scutellar pore present. Series of umbilical pores consisting of 4 or 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation strongly reduced, though usually highly superficial and just visible at high magnification, puncturation moderately fine and of slightly varying size, fairly dense, not at all rasp-like, surface usually with some irregular wrinkles, more or less distinctly, though sparsely pilose, sometimes very difficult to detect, moderately glossy.

Lower surface. Prosternal process rather elongate, moderately wide, straight, apex rather wide, gently convex, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather densely punctate and pilose.

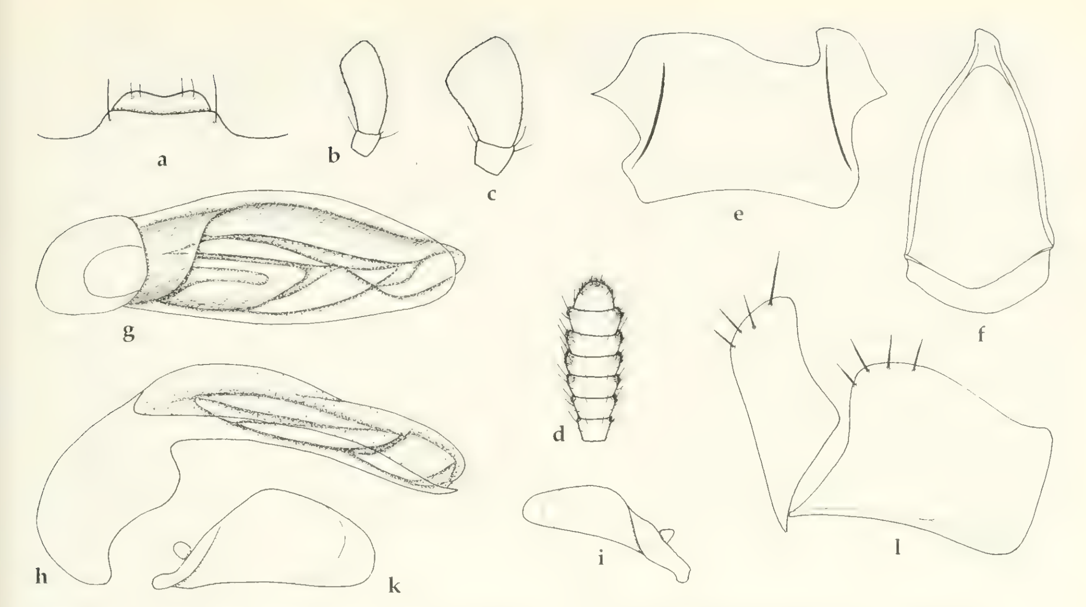
Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide.

♂ genitalia (Figs 203e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, moderately excised base. Sternum VII moderately wide, apically almost regularly convex, with fairly deep excision, basally rather deeply excised, basal angles obtuse or obtusely rounded, lateral parts rather short. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface almost straight to gently concave. Apex wide, evenly rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres rather wide and at apex widely rounded, left paramere considerably larger than right.

♀ genitalia (Fig. 203l). Stylomere rather wide, apex widely, sometimes obliquely rounded, lateral border almost straight to slightly concave, with 2-4 elongate subapical setae. Lateral plate moderately elongate, with 3-4 elongate apical setae.

Variation. This subspecies shows considerable variation even, when both other formally described subspecies are removed. Colour may vary to such degree, that the elytra are almost wholly dark, the relative width of the pronotum varies somewhat, density of puncturation and pilosity varies to a considerable degree, and the microreticulation on the elytra varies from fairly distinct to completely absent.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts..



Figs 203a-l. *Adelotopus dubius dubius*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Habits. Largely unknown. Specimens were collected "under bark of *Eucalyptus dalrympleana*", "under bark of *Eucalyptus viminalis*", "under *Eucalyptus* bark", "in bark of living *Eucalyptus*", in "flight interc. trap", and in "flight intercept Window/trough trap". Specimens collected by me under bark of gum-type eucalypts. Dated specimens captured in all months except for May, but most during the summer months.

Distribution (Fig. 632). Tasmania, eastern Victoria, Australian Capital Territory, southern New South Wales, ? southern Queensland. The latter record is based on a single specimen from Mt. Tamborine, collected by Barry Moore. Hence a mistake of localities should be after all excluded. Moore, however, also collected intensely in the ACT, so this might yet be a mislabelled specimen.

Material examined (88). Only the type series.

Etymology. The name refers to the doubtful taxonomic position of this very variable subspecies and its questionable synonymy with the doubtful *A. scolytides* Newman.

Note. In view of the high variability of this subspecies I am not wholly sure that it does not include further taxonomically valid infraspecific taxa. At present and by use of pure morphological methods, this question is not solvable.

Adelotopus dubius glaber, subspec. nov.

Figs 60, 392, 543, 633

Types. Holotype: ♂, Warburton, V, F. E. Wilson Mar. 1922, F. E. Wilson Collection, det. *scolytides* (NMV)[holotype marked with "H"]. – Paratypes: 1♂, 2♀♀, same data (NMV); 2♂♂, Warburton, V, F. E. Wilson Mar. 1922, 4.066 *Adelotopus scolytides* Newm. Id. by F. E. Wilson, A. H. Elston Collection, *A. scolytides* (AMS); 2♂♂, 2♀♀, P. Meyer, 11.5.66, 16-5-66, 17-5-66, 25-5-66, Woodhouse Ck. Nunniong Plateau (CBM, UASM); 2♀♀, Woodhouse Ck. Nunniong PLT. Vic, P. Meyer May 66 (UASM); 1♂, Vic, Woodhouse Ck. Nunning Plateau, 29-III-1985, P. A. Meyer coll. (CBM); 1♀, 37.18S, 148.51E, Errimundra Plateau, Vic, 30. Jan. 1983, K. R. Pullen. *Adelotopus scolytides* Newm. Det. B. P. Moore'85 (ANIC).

Diagnosis. Subspecies distinguished from *A. d. dubius*, subspec. nov. by generally larger size, clearly delimited red apex of elytra, wider pronotum with narrower and less chanelled lateral margins and

more widely rounded basal angles, less dense puncturation especially on the elytra, and loss of microreticulation on the elytra that makes the surface highly glossy; distinguished from *A. dubius hobartensis*, subspec. nov. by generally slightly wider pronotum and even sparser puncturation on the elytra.

Description

Measurements. Length: 5.2-5.8 mm. Ratios. Width/length of pronotum: 1.68-1.86; width base/apex of pronotum: 1.60-1.68; width pronotum/head: 1.70-1.80; length/width of elytra: 1.45-1.52; length elytra/pronotum: 2.59-2.81.

Colour (Figs 60, 392). Piceous-black to black, margins of pronotum and elytra usually conspicuously reddish translucent. Apex of elytra widely reddish, well delimited, the margin of the reddish part prolonged at suture and at lateral margin. Lower surface of head and thorax piceous or reddish-piceous, abdomen reddish. Mouth parts and antennae reddish or reddish-piceous, legs more or less light reddish, tibiae and tarsi distinctly darker.

Head. Similar to nominate subspecies.

Pronotum (Fig. 392). Rather similar to *A. dubius hobartensis*, subspec. nov., but usually even wider.

Elytra (Figs 60, 392, 543). Rather similar to nominate subspecies, though microreticulation usually completely wanting, puncturation fine and sparse, surface more or less distinctly, though sparsely pilose, very glossy. Puncturation even sparser and surface glossier than in *A. dubius hobartensis*, subspec. nov.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia. Very similar to nominate subspecies.

♀ genitalia. Very similar to nominate subspecies.

Variation. There is some variation especially in shape of pronotum and in density of the puncturation on pronotum and elytra.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by P. Meyer "under bark of *Eucalyptus delegatensis*" and "under bark of *Eucalyptus* sp.". Dated specimens captured in January, March, and May.

Distribution (Fig. 633). Eastern Victoria.

Material examined (14). Only the type series.

Etymology. The name refers to the glabrous, highly glossy surface.

Adelotopus dubius hobartensis, subspec. nov.

Figs 393, 544, 633

Types. Holotype: ♀, Hobart, Tas. C. Oke Jan. 1941, *Adelotopus scolytides* Newm. ? var. (NMV). – Paratypes: 1♀, Hobart, Tas. C. Oke 15.12.43, *Adelotopus scolytides* Sp. var. (NMV); 2♀♀, 2083, Hobart 91-88., *Adelotopus scolytides* Newm. Id. by T. G. Sloane (BMNH); 1♂, 1♀, 2084, Hobart 91-88., det. *scolytides* (BMNH); 1♂, 6429, Hobart 92-54., det. *scolytides* (BMNH); 1♂, Hobart Tas: Lea, Inquiline, ac.13246, *Adelotopus scolytides* Newm. Id. by A. M. Lea, *apicalis* McL (AMNH); 1♀ (?), Hobart Tas: Lea, 3899, *A. scolytides* Newm. (SAMA); 1♀, Hobart Tas: Lea, Lea's (SAMA); 1♂, 1♀, Hobart Tasmania J. J. Walker, *Adelotopus haemorrhoidalis* Er. G. C. Champion Coll. 1927-409 (BMNH); 1♀, Hobart Tasmania J. J. Walker, det. *haemorrhoidalis* (BMNH); 1♀, Hobart, Tasmania J. J. Walker, *Adelotopus haemorrhoidalis* Er. (CBM); 1♀, G. H. Hardy Hobart 10.1.15/8 (QMB); 1♀, 1,300-2,300 ft. R. E. Turner 1913-212, Mt. Wellington, S. Tasmania 15 Jan.-6 Feb. 1913, det. *scolytides* (BMNH); 1♀, Mt. Wellington Tas. 26.12.01 Griffith, Griffith Coll. Id. by A. M. Lea, *Adelotopus scolytides* Newm. Tas. 1536 (SAMA); 1♀, National Park Jan. 1941 Tas, C. Oke, *A. tasmaniae* Bl. (NMV); 1♀, Arve R., S Tas, Hartz Nat Park, Dec.'56 Darlingtons, *scolytides* N. as det by Sl (MCZ); 1♂, 1♀, Arve R., S Tas, Hartz Nat Park, Dec.'56 Darlingtons, det. *apicalis* (MCZ); 1♀, Arthur Plains, S.W. Tas. 6.2.1965 Neboiss (NMV); 1♂, Ridgeway, Tas. C. Oke 14.10.48 (CBM); 1♂, 1♀, Australia: 3 km S Frodsham Pass, Tas: 14.XII.1982, G. & P. Bornemissza (DPIM).

Diagnosis. Subspecies distinguished from *A. d. dubius*, subspec. nov. by generally larger size, usually clearly delimited red apex of elytra, generally slightly wider pronotum with narrower and less chanelled lateral margins and more widely rounded basal angles, less dense puncturation especially

on the elytra, and usually loss of microreticulation on the elytra that makes the surface highly glossy; distinguished from *A. dubius glaber*, subspec. nov. by generally narrower pronotum and still slightly denser puncturation on the elytra.

Description

Measurements. Length: 4.9-6.0 mm. Ratios. Width/length of pronotum: 1.59-1.75; width base/apex of pronotum: 1.58-1.65; width pronotum/head: 1.67-1.72; length/width of elytra: 1.47-1.53; length elytra/pronotum: 2.62-2.75.

Colour (Fig. 393). Piceous-black to black, margins of pronotum and elytra usually conspicuously reddish translucent. Apex of elytra widely reddish, well delimited, the margin of the reddish part prolonged at suture and at lateral margin. Lower surface of head and thorax piceous or reddish-piceous, abdomen reddish. Mouth parts and antennae reddish or reddish-piceous, legs more or less light reddish, tibiae and tarsi distinctly darker.

Head. Similar to nominate subspecies.

Pronotum (Fig. 393). Rather similar to nominate subspecies, but usually slightly wider, lateral margins less wide and less chanelled, and basal angles more widely and evenly rounded. Microreticulation more or less superficial, puncturation moderately fine, rather dense, sometimes slightly rugose, surface sparsely pilose, pilosity sometimes difficult to detect, rather glossy.

Elytra (Figs 393, 544). Rather similar to nominate subspecies, though microreticulation usually completely wanting, puncturation moderately fine and rather sparse, surface more or less distinctly, though sparsely pilose, glossy.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia. Very similar to nominate subspecies.

♀ genitalia. Very similar to nominate subspecies.

Variation. There is some variation especially in shape of pronotum and in density of the puncturation on pronotum and elytra. Colour pattern shows little variation.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Most specimens very old. Dated specimens captured from December to February only.

Distribution (Fig. 633). Southwestern Tasmania.

Material examined (25). Only the type series.

Etymology. The name refers to the locality, where most specimens have been collected.

Adelotopus montorum, spec. nov.

Figs 204, 394, 545, 634

Types. Holotype: ♂, Wentworth Fs. (SAMA). – Paratypes: 10♂♂, 4♀♀, same data (CBM, SAMA); 3♂♂, 2♀♀, Harrietville 24.4.50, Vic C. Oke (CBM, NMV); 1♀ Cotter, A.C.T. in seed trap 16.-20.XII.65, E. J. Poole (ANIC); 1♀, Mt. Gimini Brindabella Ra ACT Feb 1975 K. R. Pullen, Kim Pullen Coll. (ANIC); 1♂, F.C.T. Aust. Blundell's, 15.12.1931 (ANIC); 1♂, Australia: N.S.W. Leather Barrel Ck. Kosciusko St. Pk. XII-27-1977 E. I. Schlinger (CAS); 1♀, Tinderry Rd., NSW, c. 1400 m, 10.III.76, W. & S. Allen (ANIC); 1♂, Jervis Bay. N.S.W. 18.9.49, D. Waterhouse (ANIC); 1♂, Jenolan N.S.W. (SAMA); 1♀, Sydney, New South Wales 1913-177, det. *gyrinoides* (BMNH); 4♂♂, 4♀♀, Sydney (CBM, SAMA); 1♂, 1♀, Sydney district, N.S.W. J.J.W., H. J. Carter Coll. P.20.4.22, det. *politus* (NMV); 21♂♂, Australia Biró 1900, N. S. Wales Mt. Victoria (CBM, HNMB); 1♀, Mt. Wilson Per H.J.C., 3.19 (ANIC); 1♀, N. S. Wales, Mittagong (MMS); 2♂♂, Blue Mts. Blackburn, *Adelotopus vicinus* Cast. N. S. Wales (SAMA); 2♂♂, 4065 BJ.NI. Blue Mts Blackburn, *vicinus* Cast. (SAMA); 1♂, 3♀♀, Blue M'tains 12-02 (SAMA); 1♂, 1♀, Blue Mts. N. S. Wales G. E. Bryant 1.1909, G. Bryant Coll. 1919 (BMNH); 1♂, AUS. NSW. 15.IV.1985 Clarence, Blue Mts. Vr. R. Bejsak lgt. (CBS); 1♀, Forest Reefs, N. S. Wales, *Adelotopus* ? *aff.* N. S. Wales (SAMA); 1♀, Narara, N.S.W. 28.11.1946 C. Oke, *A. vicinus* Cast., *A. vicinus* (NMV); 1♀, *Adelotopus* sp. ? Boenenfells, N.S.W., 53, Howitt Colln (NMV); 1♀, Masters, Nov. Holl. N.S.W., *Adelotopus gyrinoides* Hope compared with type G.J.A., Fry Coll. 1905.100 (BMNH); 2♂♂, 83 *Adelotopus* n. sp., NSW (OUM); 1♂, N. S. Wales, N. sp. sec. Masters, Ex Musaeo H. W. Bates 1892 (MNHN); 1♂, n. Holl. N.S.W., Janson Acq. 1884 (MNHN); 1♂, N. S. Wales, Ex Musaeo H. W. Bates 1892 (MNHN); 1♂, N. S. Wales (ANIC); 2♀♀, N. Holl., Collect. Plason (NHMW); 1♀, E. W. Froggatt

Collection, *Adelotopus vicinus* Cast. W. K. Hughes det. (ANIC); 2♂♂, Ex Musaeo Van Lansberge (MNHN); 1♀, 55, Howitt Colln (NMV); 1♂ (ANIC).

Diagnosis. Medium sized, fairly wide, rather depressed, black species. Distinguished from related species by wide pronotum, comparatively short elytra, absence of microreticulation on pronotum and elytra, moderately dense, on elytra not rasp-like puncturation, glossy surface, absence of a scutellar pore, short aedeagus with wide, transversely cut apex, widely rounded basal angles of ♂ sternum VII, wide, apically widely rounded stylomere with sinuatelateral margin, and elongate lateral plate. Distinguished from most closely related *A. victoriensis*, spec. nov. and *A. murrayanus*, spec. nov. mainly by wider and shorter pronotum and elytra, uniform black colour, and transverse instead of rounded apex of aedeagus.

Description

Measurements. Length: 4.6-6.1 mm. Ratios. Width/length of pronotum: 1.85-1.93; width base/apex of pronotum: 1.60-1.65; width pronotum/head: 1.70-1.78; length/width of elytra: 1.43-1.46; length elytra/pronotum: 2.81-2.83.

Colour. Piceous-black to black, lateral margins of pronotum and elytra and apex of elytra usually not reddish translucent. Lower surface reddish-piceous to piceous, sometimes abdomen lighter. Mouth parts, antennae, and legs reddish-piceous, sometimes tibiae and tarsi slightly darker.

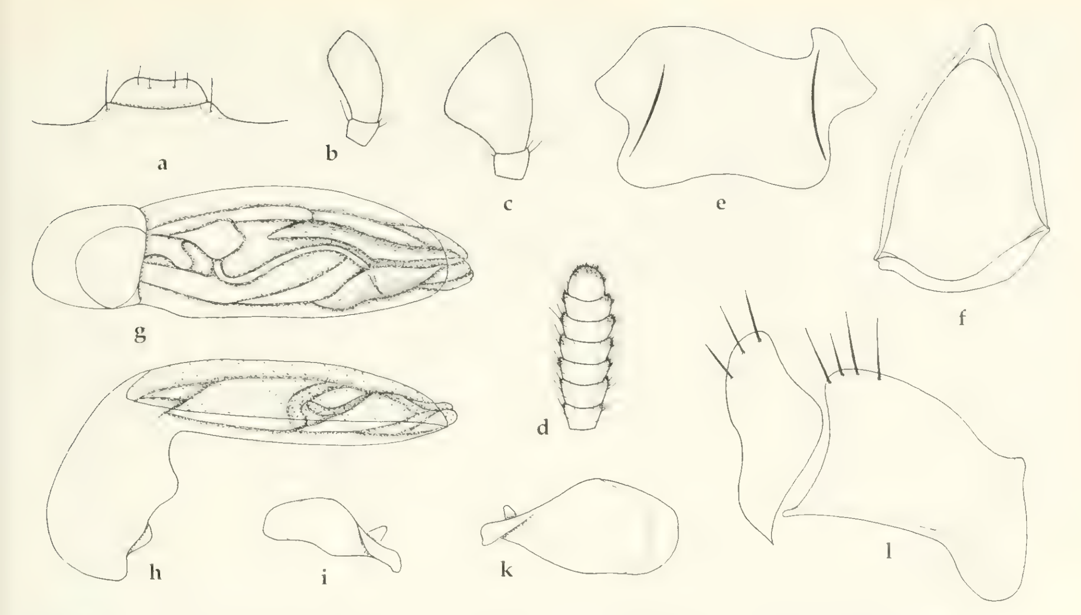
Head (Figs 204a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, slightly superficial, puncturation fine, moderately dense. Surface with a shallow sulcus medially of eyes and with some rather fine irregular wrinkles, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 394). Rather wide, moderately convex, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered. Sides strongly and evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles widely rounded off. Base straight to slightly convex, faintly, though rather irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation fine, moderately dense, surface only laterally extremely sparsely pilose, pilosity very difficult to detect, surface glossy.

Elytra (Figs 394, 545). Rather wide, fairly depressed on disk, almost regularly narrowed to apex. Apex moderately wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed. Basal border incomplete, reaching to about middle between lateral border and suture. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4, rarely unilaterally 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, moderately dense, not at all rasp-like, surface almost impilose, sometimes few tiny hairs visible at lateral borders under high magnification, very glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.



Figs 204a-l. *Adelotopus montorum*, spec. nov. Details of head and genitalia. For legends see fig. 100.

♂ genitalia (Figs 204e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII moderately wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface gently convex. Apex wide, symmetric, rather cut off, though slightly convex. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres at apex wide, widely rounded, right paramere fairly wide, on lower surface slightly sinuate, left paramere considerably larger than right, very wide.

♀ genitalia (Fig. 204l). Stylomere rather wide, apex slightly obliquely rounded, lateral border slightly sinuate, with 2-4 elongate subapical setae. Lateral plate elongate, with 2-4 elongate apical setae.

Variation. Apart from some variation of size and colour (the latter perhaps partly due to not fully coloured specimens), there is some variation of relative width of pronotum and of elytra, of degree of puncturation, and of shape of parameres.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. One specimen collected "in seed trap", some captured in rather high altitudes. Dated specimens collected in September and from November to April.

Distribution (Fig. 634). Northeastern Victoria, southern New South Wales to north of Blue Mountains, and Australian Capital Territory.

Material examined (89). Only the type series.

Etymology. The name refers to the ocurrence of this species in the Blue Mountains.

Adelotopus lawrencei, spec. nov.

Figs 205, 395, 546, 635

Types. Holotype: ♂, NSW, 20 km S. of Brindabella, 19 Jan.1985, J. F. Lawrence (ANIC). – Paratypes: 1♀, Wilpena Pound, SA, Austral. 12.1972, M. Baehr (CBM); 1♀, Walhalla. V, Apr.1946, K. Clark, F. E. Wilson Collection, *A. tasmaniae* (NMV); 1♂, 1♀, Warburton, V., F. E. Wilson, May 1922, 4066, *Adelotopus scolytides* Newm. Id. by F. E. Wilson, A. H. Elton Coll. (AMS); 1♂, 1♀, Beaconsfield, Vic, C. Oke (NMV); 1♀, Bendoc, V. Jan.1938

F. E. Wilson , F. E. Wilson Collection (NMV); 1♂, 1♀, Mt. Dam Dam V. 2.500 FT. 13/6/54 A. Neboiss (NMV); 1♀, Lake Mountain, Vic 17 Jan. 1961, A. N. (NMV); 1♂, Lake Mtn. V 20.2.54 F. E. Wilson, F. E. Wilson Collection (NMV); 1♀, Gembrook, Vic C. Oke (NMV); 1♀, Vic, 1000 m, Mt. Anthony (?), 9.II.76 (CSB); 1♂, Vic, Bentley's Plain, Nunniong Plateau, 29-XII-1985, P. A. Meyer coll. (CBM); 1♀, Bonang, V. Jan 1938 F. E. Wilson, F. E. Wilson Collection (NMV); 1♀, Victorian Alps Blackburn, *haemorrhoidalis* Er, *Adelotopus haemorrhoidalis* Er. Vic: Tas (SAMA); 3♂♂, 2♀♀, Tumut R. I.53, Australia: Tumut R., NSW, I.1956, J. Sedlacek (CBM, CSB); 1♂, Australia, Tumut R. NSW 1450 m, 1956, J. Sedlacek (CSB); 2♂♂, 2♀♀, Australia: NSW, 5 km E. Thredbo 1200 m, 19.X.1963, J. Sedlacek Collector (BMH); 1♂, Australia, Kosciusko N. P., Sawpit Creek, N.S.W., 6.II.83, B. P. Moore (CMC); 1♀, Kosciusko HJC 1.27 (ANIC); 1♂, 1♀, Blue Mountains 1.05, HJC (NMV); 1♂, Narara, N.S.W. 29.11.46. C. Oke (NMV); 3♀♀, N.S.W, J. Sedlacek 1951 (CSB); 1♂, Masters, Nov. Holl. N.S.W., Fry Coll. 1905-100, det. *gyrinoides* (BMNH); 1♂, Australia, J. Sedlacek Coll. (CSB); 1♀, 54, Howitt Colln (NMV); 1♂ (NMV); 1♀ (NMV).

Diagnosis. Medium sized, wide, depressed, glossy black species. Distinguished from related species by reddish colour of apex of elytra, very wide pronotum with fairly lateral margins, comparatively short elytra, absence of microreticulation on pronotum and elytra, moderately dense, on elytra not rasp-like puncturation, very glossy surface, absence of a scutellar pore, and short aedeagus with very wide, rounded apex. Distinguished from similarly couloured species *A. lunatus*, spec. nov. by generally narrower pronotum, longer elytra, less number of marginal punctures of elytra, and denser punctuation of surface.

Description

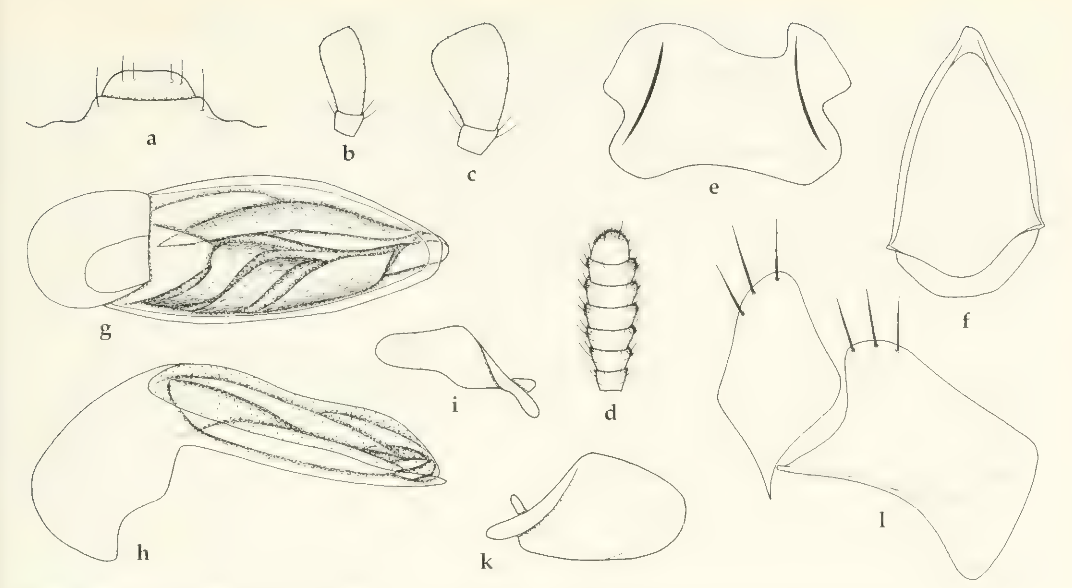
Measurements. Length: mm. 4.9-6.45 Ratios. Width/length of pronotum: 1.92-1.98; width base/apex of pronotum: 1.57-1.69; width pronotum/head: 1.76-1.87; length/width of elytra: 1.47-1.51; length elytra/pronotum: 2.81-2.91.

Colour (Fig. 395). Glossy black, sometimes margins of pronotum feebly reddish translucent, elytra with rather well delimited, semilunar, reddish apex. Lower surface of head and thorax piceous-black, abdomen reddish-piceous or reddish, apex becoming lighter. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi piceous.

Head (Figs 205a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex barely concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, distinct, puncturation rather fine, fairly dense. Surface with a shallow sulcus medially of eyes and usually with some fine irregular wrinkles, impilose, moderately dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 395). Very wide, rather depressed, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly bordered. Sides strongly and evenly curved throughout, widest near base. Margins moderately wide, slightly explanate, faintly bordered. Basal angles widely rounded off. Base slightly concave, barely bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation rather fine, moderately dense, surface with some fine wrinkles, very shortly and sparsely pilose especially laterally, very glossy.

Elytra (Figs 395, 546). Rather wide, fairly short, depressed on disk, in basal half almost parallel, then almost regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel in basal half moderately wide, then narrow, partly concealed. Basal border incomplete, attaining only outher third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4, rarely unilaterylly 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, fairly dense, not at all rasp-like, in apical half punctures sometimes becoming slightly coarser and denser. Surface extremely finely and sparse pilose, very glossy.



Figs 205a-l. *Adelotopus lawrencei*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Lower surface. Prosternal process moderately elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum rather elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 205e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus short, fairly depressed, in middle rather widened, symmetric. Lower surface almost straight to slightly convex. Apex very wide, symmetric, widely rounded. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres wide, rather triangular, apex widely rounded, left paramere considerably larger and wider than right.

♀ genitalia (Fig. 205l). Stylomere wide, apex rounded, lateral border slightly sinuate, with 3-4 elongate subapical setae. Lateral plate elongate, with 2-4 elongate apical setae.

Variation. Apart from some differences of size and of degree of puncturation there is considerable variation of relative width of pronotum that is generally narrower in small specimens and relatively larger in large specimens.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of river gum in semiarid country, another specimen collected by P. Meyer "Under bark *Eucalyptus dalrympleana*". Dated specimens captured in the periods from April to June and from October to February.

Distribution (Fig. 635). Eastern South Australia, Victoria, Australian Capital Territory, southeastern New South Wales north to Blue Mountains. The single South Australian record is a specimen collected by me at Wilpena Pound which is a rather inland locality.

Material examined (40). Only the type series.

Etymology. Named in honour of J. F. Lawrence of ANIC, Canberra, collector of several pseudomorphine species and authority of Australian larval beetles.

Adelotopus victoriensis, spec. nov.
Figs 206, 396, 547, 636

Types. Holotype: ♂, Macedon, Vic. C. Oke (NMV). – Paratypes: 5♂♂, 16♀♀, Victoria Alexandra, CNHM 1955 Karl Brancsik Coll, Ex Eduard Knirsch, Australia, *hydrobioides* det. Ball (FMNH, UASM); 1♂, 1♀, Billabong, Goulburn River, Chinamen's Ford Road, Alexandra Vic, Under Eucalypt bark 6.III.1974 P. J. Gullan (UASM); 1♂, Ballarat, Vic. C. Oke, *Adelotopus scolytides* (NMV); 1♂, 4206, Nov. Holl. Melb., Fry Coll. 1905.100, det. *gyrinoides* (BMNH); 1♂, 1♀, Melbourne Bakewell, Ex Musaeo Chaudoir, det. *scolytides* Newman (MNHN); 1♀, Melbourne, Bowring 63-47* (BMNH); 1♂, 1♀, Melbourne Coll. Castelnau, *Hydrobioides* West. Melb. (MCSN); 1♂, Melbourne Coll. Castelnau, *Hydrobioides* W. (Melbourne), *Scolytides* Newm. nec *hydrobioides* det. Gestro (MCSN); 1♂, P. Philipp, NH, *conformis*, Hope, This name not in Gemm. & Har. Cat. W.H. (OUM); 1♀, Beechworth, 20.4.30 C. Oke, Vic, *A. politus* (NMV); 24♂♂, 18♀♀, Australien, Vic 136, 5 km w. Gapsted, nw. Myrtleford, 15.12.1990, M. Baehr (CBM, MCZ, QMB, ZSM); 7♂♂, 4♀♀, Australien, Vic 133, 10 km e. Bright, 14.12.1990, M. Baehr (CBM); 1♀, Bright V. A. H. Davey, *Adelotopus politus* Cast. Id. by A. M. Lea (ANIC); 1♂, Australien, Vic 129, 10 km n. Kiewa, 13.12.1990, M. Baehr (CBM); 1♂, 1♀, Wadonga Vic (NMV); 1♂, Whitlands 29.3.37. V. F. E. Wilson, F. E. Wilson Collection (NMV); 1♀, Australia Victoria, CNHM 1955 Karl Brancsik Coll, Ex Eduard Knirsch, *Adelotopus hydrobioides* det. G. E. Ball 1987 (FMNH); 1♀, Australia Victoria, det. *scolytides* (MNHB); 1♂, 2606 Victoria, det. *apicalis* (AMNH); 1 (sex?), 130, *Adelotophus* (sic!) *hydrobioides* Westw. Victoria, 31, Howitt Colln (NMV); 1♂, King I. Tas: Lea, *Adelotopus politus* Cast. King Island (SAMA); 2♀♀, Tas J.H., Golden Tas 6.3.77, J. Sedlacek Collector (CSB); 5♂♂, Canowindra Jan.56 N.S.W. F. E. Wilson, det. *politus* (NMV); 1♀, Deniliquin 21.1.55 N.S.W. F. E. Wilson, F. E. Wilson Collection (NMV); 1♂, Hist.-Coll. Nr. 42157 Nov. Holl. Coll. Schaum, det. *scolytides* (MNHB); 3♂♂, Australia Oppenhmr., Coll. B. Schwarzer (SMF C 16271); 1♀, N. Holl., Janson Acq. 1884 (MNHN); 1♀, Sheffield T 10/1 (?) MG, Griffith Collection Id. by A. M. Lea (SAMA); 1♀, 42157, *apicalis* Chd & Schaum, Nov.-Holl., *scolytides* Newm. Australia (MNHB); 1♀, 39, Howitt Colln, det. *paroensis* (NMV); 1♂, 130, 32, Howitt Colln, det. *hydrobioides* (NMV); 1♂, 33, Howitt Colln, det. *hydrobioides* (NMV); 3♀♀ (NMV).

Diagnosis. Medium sized, fairly wide, rather depressed, black species. Distinguished from related species by moderately wide pronotum, comparatively elongate elytra, absence of microreticulation on pronotum and elytra, rather dense, on elytra not rasp-like puncturation, glossy surface, absence of a scutellar pore, short aedeagus with rather wide, widely rounded apex, widely rounded basal angles of ♂ sternum VII, moderately wide, apically obliquely rounded stylomere with sinuate lateral margin, and elongate lateral plate. Distinguished from most closely related *A. montorum*, spec. nov. mainly by narrower and more elongate pronotum and elytra, less uniform black colour, and rounded instead of transverse apex of aedeagus.

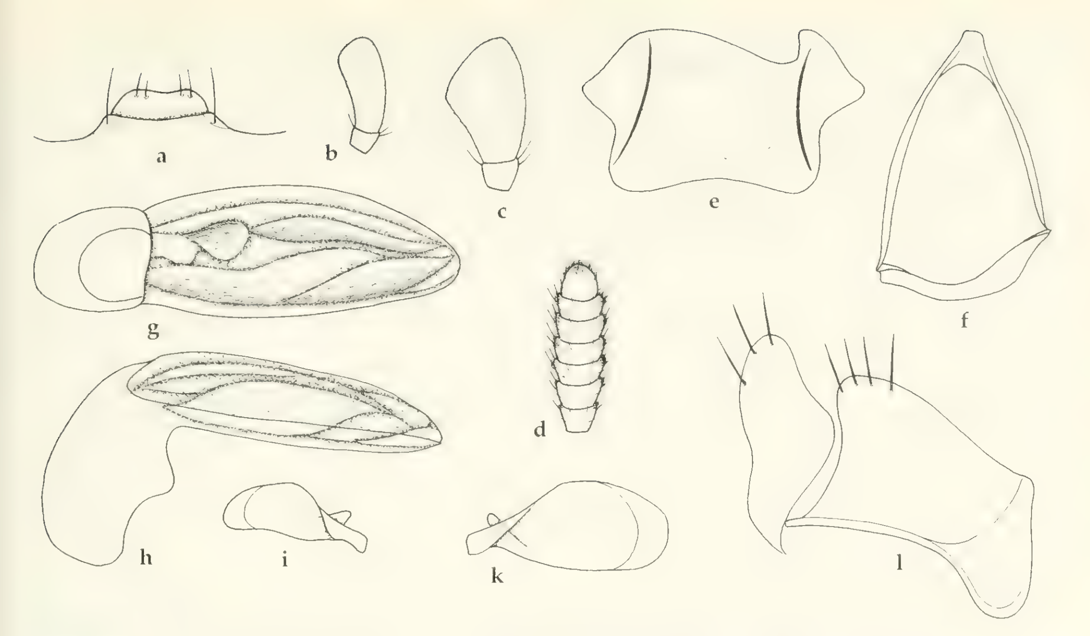
Description

Measurements. Length: 4.75-6.05 mm. Ratios. Width/length of pronotum: 1.75-1.86; width base/apex of pronotum: 1.55-1.60; width pronotum/head: 1.67-1.73; length/width of elytra: 1.47-1.50; length elytra/pronotum: 2.65-2.80.

Colour. Piceous-black to black, lateral margins of pronotum and elytra and apex of elytra usually slightly reddish translucent. Lower surface reddish-piceous to piceous, sometimes abdomen lighter. Mouth parts, antennae, and legs reddish-piceous, tibiae and tarsi usually slightly darker.

Head (Figs 206a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation almost absent, very superficial, puncturation fine, moderately dense. Surface with a shallow sulcus medially of eyes and with some rather fine irregular wrinkles, impilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 396). Moderately wide, moderately convex, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered.



Figs 206a-l. *Adelotopus victoriensis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Sides strongly and evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly bordered. Basal angles widely rounded off. Base straight to slightly concave, faintly, though rather irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation fine, moderately dense, surface only laterally extremely sparsely pilose, pilosity very difficult to detect, surface glossy.

Elytra (Figs 396, 547). Moderately wide, fairly depressed on disk, in basal half almost parallel, in middle usually even faintly widened, then almost regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though faintly widened in middle, partly concealed. Basal border incomplete, attaining only outher third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, rather dense, not at all rasp-like, surface almost impilose, sometimes few tiny hairs visible at lateral borders under high magnification, very glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather densely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 206e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII moderately wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface gently convex. Apex wide, symmetric, rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres apex rather wide, widely rounded, right paramere fairly wide, on lower surface slightly sinuate, left paramere considerably larger than right, very wide.

♀ genitalia (Fig. 206l). Stylomere moderately wide, apex narrowed, obliquely rounded, lateral border slightly sinuate, with 2-4 elongate subapical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. Apart from some variation of size and colour (the latter perhaps partly due to not fully coloured specimens), there is little variation of relative width of pronotum and of elytra.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of different gum-type and stringybark-type eucalypts, one specimen "under eucalypt bark". Dated specimens captured in January, March, April, and December.

Distribution (Fig. 636). Eastern Victoria, adjacent southern New South Wales, northern Tasmania including King Island.

Material examined (118). Only the type series.

Etymology. The name refers to the occurrence of most specimens of this species in eastern Victoria.

Adelotopus murrayanus, spec. nov.

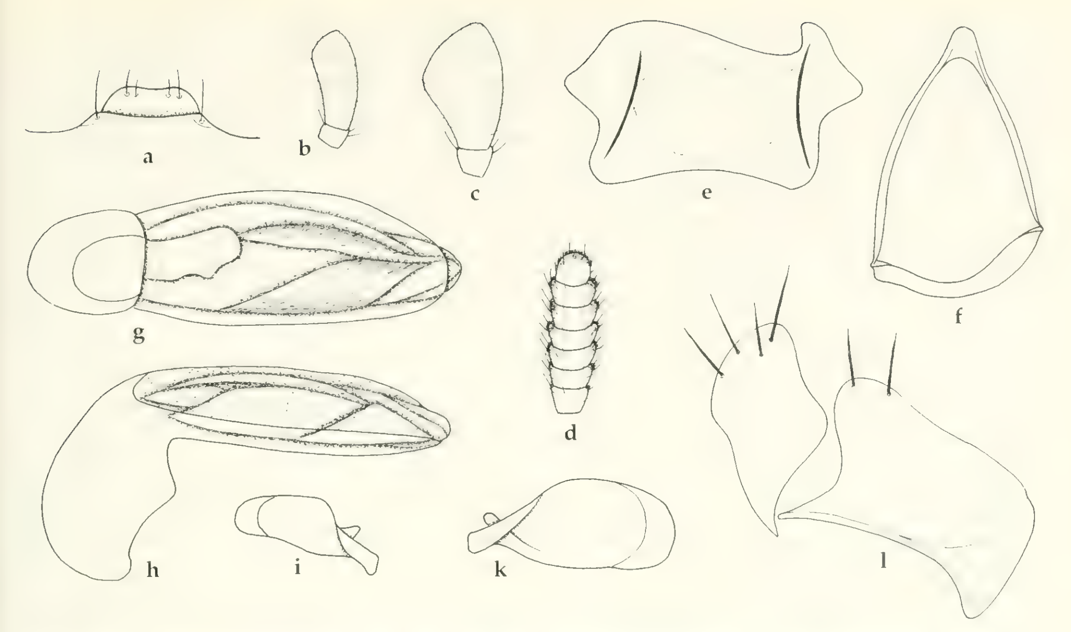
Figs 207, 397, 548, 636

Types. Holotype: ♂, Lake Hattah, Victoria, J. E. Dixon (ANIC) [fixed on the same card with another ♂ and one ♀, holotype on the right side, marked H.T.]. – Paratypes: 1♂, 1♀, same data, on the same card (ANIC); 1♀, Under *Eucalyptus* bark, tank Murray River opp. Caloote Landing 7.Jan 1971, J. Szent-Ivany and J. Lakatas (SAMA); 1♀, left bank of Murray R. opp. Caloote Landing S. Aust. under bark of *Eucalyptus* sp. 30.Jan.1971, J. J. H. Szent-Ivany (SAMA); 1♂, 1♀, S. Aust. Sinclair Flat R. Murray 22nd Feb.1973, G. F. Gross (SAMA); 1♀, Murray R. S. Australia A. H. Elston, *Adelotopus micans* Blackb. 1586, A. H. Elston Coll. (AMS); 1♂, 1♀, Portland J.E.D. (ANIC); 1♂, Lake Hattah Victoria J. E. Dixon, E. Sutton Coll. 1964, *Adelotopus inquilinus* Erichs. (QMB); 1♂, 1♀, Hattah, *Adelotopus inquilinus* Erichs. Id. by H. J. Carter (UQIC) [mounted with one specimen of *A. paroensis* Castelnau on same card, the latter marked "p"]; 1♀, Lake Hattah Victoria J. E. Dixon, *A. micans* Bl. C. Oke (AMS); 1♀, Lake Hattah Victoria J. E. Dixon, *Adelotopus micans* Bl. (BMNH) [mounted with two defect specimens of *A. paroensis* Castelnau on same card, the latter marked "p"]; 3♂♂, 3♀♀, Lake Hattah Victoria J. E. Dixon (CBM, NMV); 1♀, Hattah C. Oke Sept.27, *Adelotopus micans* B., Id. by C. Oke (NMV) [mounted with two specimens of *A. paroensis* Castelnau on same card, the latter marked "p"]; 1♀, *Adelotopus gyrinoides* Hope, Hattah near Murray Rv. Vict. 1.13 Dixon (NMV); 1♂, Meringur N. Vic. 1.1.31 C.E.C. Australia C. E. Clarke Coll. (BMNH); 2♀♀, Mallee District, Victoria (NMV) [mounted with one specimen of *A. paroensis* Castelnau on same card, the latter marked "p"]; 1♀, Mallee (?) 10.14 (NMV); 3♀♀, Lake Gnoornpool N. W. Victoria (Dixon) (NMV); 2♂♂, Lake Gnoornpool N. W. Victoria J. E. Dixon (NMV); 1♀, 1♂ (defect), Mulwala N. S. Wales, *Adelotopus* sp. Id. by T. G. Sloane (SAMA); 1♀, Mulwala N.S.W. T.G.S. 5.4.20 (CBM); 1♂, 3♀♀, Mulwala N.S.W. T.G.S. 18.1.23 (ANIC); 2♀♀, Mulwala T.G.S. 9.16 (ANIC); 1♀, Mulwala T.G.S. 12.19 (ANIC); 1♂, 1♀, Stanthorpe Queensland E. Sutton, E. Sutton Coll. 1964 (QMB); 1♂, Brisbane Australia Coll. Castelnau, Australia, Syntype *Adelotopus politus* Castelnau, 1867 (MCSN); 1♂, (unreadible) 2 67 (ANIC); 1♂, 1♀ (NMV) [mounted with one specimen of *A. paroensis* Castelnau on same card, the latter marked "p"].

Diagnosis. Medium sized, fairly wide, rather depressed, piceous species with all borders of pronotum and lateral margin and apex of elytra distinctly reddish translucent. Distinguished from related species by rather wide pronotum, comparatively elongate elytra, absence of microreticulation on pronotum and elytra, dense, on elytra not rasp-like puncturation, rather glossy surface, absence of a scutellar pore, short aedeagus with rather wide, widely rounded apex, widely rounded basal angles of ♂ sternum VII, wide, apically obliquely rounded stylomere with sinuate lateral margin, and elongate lateral plate. Distinguished from most closely related *A. montorum*, spec. nov. mainly by slightly narrower and more elongate pronotum and elytra, not uniform black colour, denser puncturation, and rounded instead of transverse apex of aedeagus.

Description

Measurements. Length: 4.9-6.2 mm. Ratios. Width/length of pronotum: 1.76-1.84; width base/apex of pronotum: 1.60-1.65; width pronotum/head: 1.72-1.77; length/width of elytra: 1.47-1.53; length elytra/pronotum: 2.77-2.81.



Figs 207a-l. *Adelotopus murrayanus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Colour (Fig. 397). Piceous, lateral margins of pronotum and elytra, apical and basal margins of pronotum, and apex of elytra usually distinctly reddish translucent. Lower surface of head and thorax piceous, abdomen reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi usually barely darker.

Head (Figs 207a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, rather superficial, puncturation fine, dense. Surface with a shallow sulcus medially of eyes and usually with some very fine irregular wrinkles, impilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 397). Rather wide, moderately convex, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered. Sides strongly and evenly curved throughout, widest near base. Margins fairly wide, slightly explanate, faintly, rather irregularly bordered. Basal angles widely rounded off. Base straight to slightly concave, faintly, very irregularly bordered. Surface near base with shallow transverse impression. Microreticulation absent or almost so, puncturation fine, dense, surface only laterally extremely sparsely pilose, pilosity very difficult to detect, surface rather glossy.

Elytra (Figs 397, 548). Moderately wide, fairly depressed on disk, in basal half almost parallel, in front of middle usually rather distinctly widened, then almost regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, though faintly widened in middle, partly concealed. Basal border incomplete, attaining only outher third of base.

Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, dense, not at all rasp-like, surface almost impilose, sometimes few tiny hairs visible at lateral borders under high magnification, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 207e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface gently convex. Apex wide, symmetric, rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres moderately wide, apex widely rounded, right paramere on lower surface slightly sinuate, left paramere considerably larger than right, wide.

♀ genitalia (Fig. 207l). Stylomere wide to very wide, apex obliquely rounded, lateral border slightly sinuate, with 3-4 elongate subapical setae. Lateral plate elongate, with 2-4 elongate apical setae.

Variation. Apart from some variation of size there is little variation of relative width of pronotum and of elytra.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Single specimens captured "under *Eucalyptus* bark" and "under bark of *Eucalyptus* sp.". Dated specimens collected from December to February, in April, and apparently alos in September and October.

Distribution (Fig. 636). Western Victoria, adjacent eastern South Australia, adjacent southernmost New South Wales; ? southeastern Queensland. The latter record is due to two old specimens from the Castelnau and Sutton Collections, labelled Brisbane and Stanthorpe. However, these records are rather doubtful, because this species seems to be a true Murrayan species found only in or close to the central Murray Valley.

Material examined (48). Only the type series.

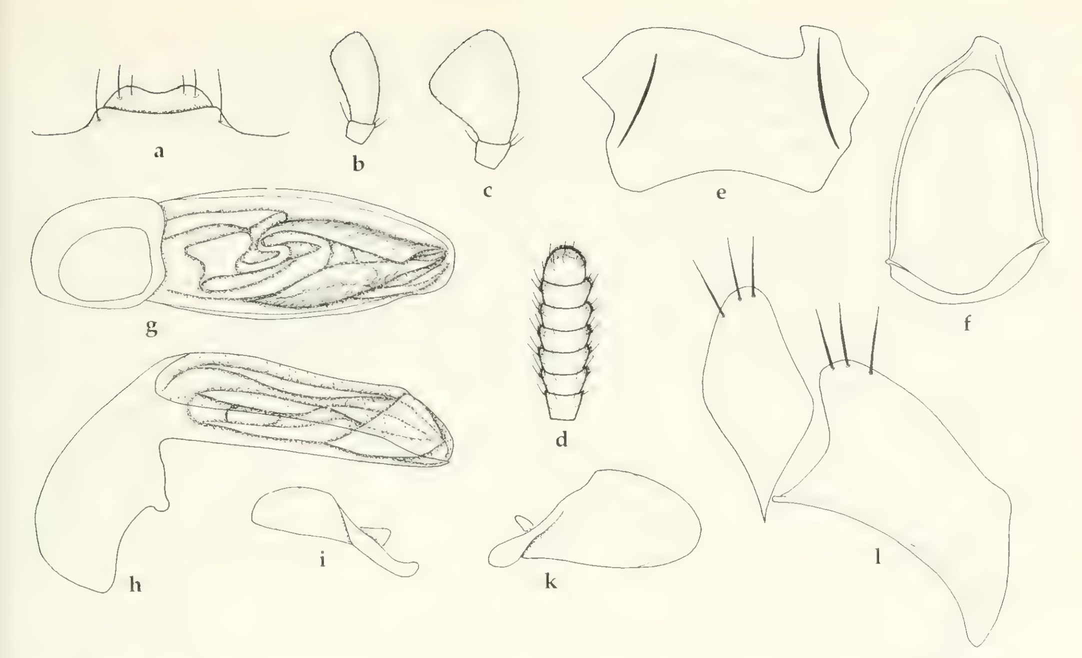
Etymology. The name refers to the occurrence of this species in the Murray valley.

Adelotopus parumpunctatus, spec. nov.

Figs 208, 398, 549, 637

Types. Holotype: ♂, 34, Howitt Colln, det. *hydrobioides* (NMV. – Paratypes: 1♂, 1♀, Australia: Victoria: M. F. L. (BMNH); 1♀, 2605 Victoria, *hydrobioides* Westw. (AMNH); 1♀, Austral. Victoria, CNHM 1955, Karl Brancsik Coll. Ex Eduard Knirsch, Pseudomorphini Genus ? sp. ? det. D. Shpeley 1987 (FMNH); 2♀♀, Australien, NSW 75, 35 km n. Glen Innes, 28.11.1990, M. Baehr (CBM); 1♀, *politus* Castel. Clarence, Ex Musaeo Mniszech, det. *haemorrhoidalis* Westwood (MNHN); 1♀, Stanthorpe Q. 12.4.23 (UQIC); 1♀, Austral. 76.3, det. *gyrinoides* (BMNH).

Diagnosis. Medium sized, wide, depressed, glossy black species. Distinguished from related species by completely black colour, very wide pronotum with wide lateral margins, comparatively short elytra, absence of microreticulation on pronotum and elytra, sparse, on elytra not rasp-like puncturation, very glossy surface, absence of a scutellar pore, short aedeagus with very wide, transversely cut and slightly sinuate apex, and widely rounded basal angles of ♂ sternum VII. Distinguished from most closely related species *A. lunatus*, spec. nov. by uniform black colour, less number of marginal punctures of elytra, and different shape of apex of aedeagus.



Figs 208a-l. *Adelotopus parumpunctatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 5.3-6.5 mm. Ratios. Width/length of pronotum: 1.98-2.05; width base/apex of pronotum: 1.65-1.70; width pronotum/head: 1.80-1.85; length/width of elytra: 1.35-1.44; length elytra/pronotum: 2.80-2.93.

Colour. Glossy black, sometimes apex of elytra faintly reddish tramnslucent, though never with well defined light margin. Lower surface of head and thorax piceous-black, abdomen reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi piceous. The light colour of holotype perhaps due to immaturity.

Head (Figs 208a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex barely concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, distinct, puncturation extremely fine, sparse, difficult to detect. Surface with a shallow sulcus medially of eyes and usually with some very fine irregular wrinkles, impilose, moderately dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 398). Very wide, rather depressed, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly bordered. Sides strongly and evenly curved throughout, widest near base. Margins wide, rather explanate, faintly bordered. Basal angles widely rounded off. Base slightly concave, faintly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation very fine, sparse, rather irregular, surface impilose, remarkably glossy.

Elytra (Figs 398, 549). Rather wide, fairly short, depressed on disk, in basal half almost parallel, then almost regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical

angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel in basal half moderately wide, then narrow, partly concealed. Basal border incomplete, attaining only outher third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4, rarely 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, rather sparse, not at all rasp-like, in apical half punctures sometimes becoming slightly coarser and arranging to irregular rows along striae. Surface impilose, remarkably glossy.

Lower surface. Prosternal process moderately elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 208e-k). Genital ring moderately wide, triangular, though slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus rather short, fairly depressed, in middle markedly widened, symmetric. Lower surface gently convex. Apex very wide, symmetric, transversely cut and faintly sinute on left side. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres moderately wide, slightly triangular, apex shortly rounded, left paramere considerably larger and wider than right.

♀ genitalia (Fig. 208l). Stylomere rather wide, apex obliquely rounded, lateral border slightly sinuate, with 3-4 elongate subapical setae. Lateral plate elongate, with 2-5 elongate apical setae.

Variation. Apart from considerable variation of size only minor variation in relative width of pronotum and elytra and degree of puncturation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Two specimens collected by me under bark of gum-type eucalypt. Dated specimens captured in April and November.

Distribution (Fig. 637). Victoria to southernmost Queensland. The records from Victoria, however, are without any exact localities, well dated specimens available only from northern New South Wales and southern Queensland.

Material examined (10). Only the type seris.

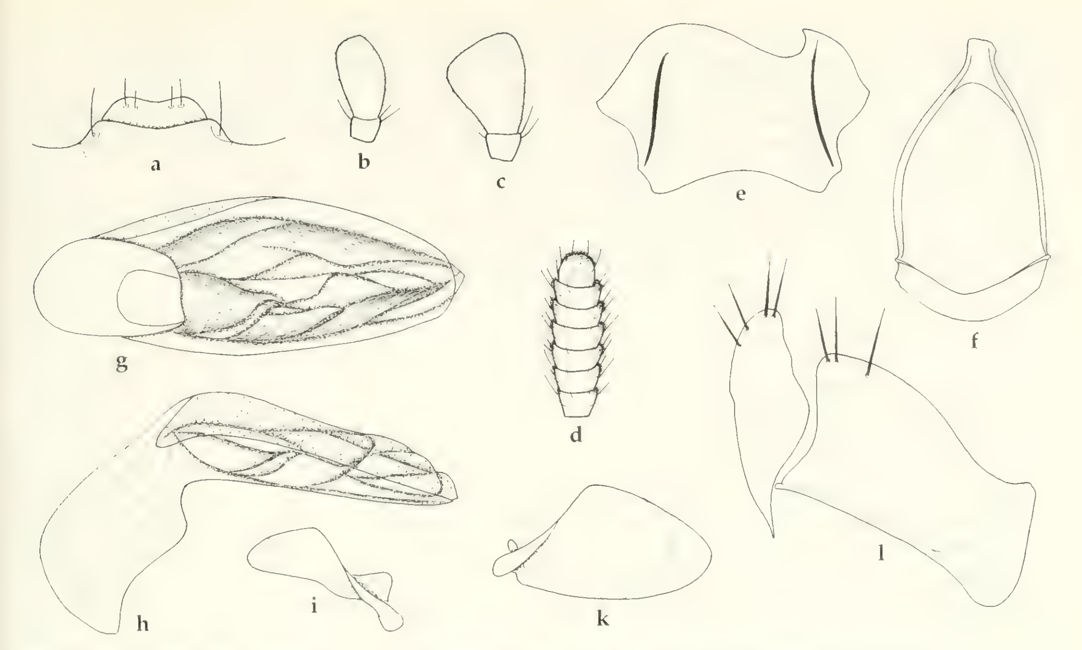
Etymology. The name refers to the sparse puncturation of the elytra.

Adelotopus lunatus, spec. nov.

Figs 209, 399, 550, 637

Types. Holotype: ♀, 35.30S, 150.18E, Kioloa SF, 15 km NE Batemans Bay, NSW, Dec.86, M. G. Robinson, flight interc. trap (ANIC). – Paratypes: 2♀♀, same data (ANIC); 1♂, Australien, ACT 124, Brindabella Rge, 1200 m, Picadilly Circus, 10.12.1987, M. Baehr (CBM); 1♀, *Adelotopus* sp. Bombala K 12389 (AMS); 1♀, *haemorrhoidalis* var. (OUM).

Diagnosis. Medium sized, wide, depressed, glossy black species with well defined semilunar, red apex of elytra. Distinguished from related species by very wide pronotum with wide lateral margins, comparatively short elytra, absence of microreticulation on pronotum and elytra, sparse, on elytra not rasp-like puncturation, very glossy surface, absence of a scutellar pore, and short aedeagus with wide, rounded apex. Distinguished from most closely related species *A. parumpunctatus*, spec. nov. by not uniform black colour colour, larger number of lateral marginal punctures of elytra, and different shape of apex of aedeagus.



Figs 209a-l. *Adelotopus lunatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 6.1-6.55 mm. Ratios. Width/length of pronotum: 1.96-2.08; width base/apex of pronotum: 1.64-1.67; width pronotum/head: 1.78-1.84; length/width of elytra: 1.37-1.45; length elytra/pronotum: 2.85-2.96.

Colour (Fig. 399). Glossy black, elytra with well delimited, semilunar, reddish apex. Lower surface of head and thorax piceous-black, abdomen reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi piceous.

Head (Figs 209a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle obtusely rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather large, moderately wide, apex barely concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus fairly elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation fine, distinct, puncturation extremely fine, sparse, difficult to detect. Surface with a shallow sulcus medially of eyes and usually with some very fine irregular wrinkles, impilose, moderately dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula sparsely setose.

Pronotum (Fig. 399). Very wide, rather depressed, base wide, rather narrowed to apex. Apical angles fairly produced, at apex obtuse, somewhat oblique, almost attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, faintly bordered. Sides strongly and evenly curved throughout, widest near base. Margins wide, rather explanate, faintly bordered. Basal angles widely rounded off. Base slightly concave, faintly bordered. Surface near base with shallow transverse impression. Microreticulation absent, puncturation very fine, sparse, rather irregular, surface impilose, very glossy.

Elytra (Figs 399, 550). Rather wide, fairly short, depressed on disk, in basal half almost parallel, then almost regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind

shoulders. Marginal channel in basal half moderately wide, then narrow, partly concealed. Basal border incomplete, attaining only outher third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 5 to 7 closely set pores behind shoulder, the posterior seta of which is somewhat removed from the others. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation fine, rather sparse, not at all rasp-like, in apical half punctures sometimes becoming slightly coarser and denser. Surface impilose, remarkably glossy.

Lower surface. Prosternal process moderately elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum moderately elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 209e-k). Genital ring moderately wide, rather convex, barely asymmetric, with slightly asymmetric, rather large, slightly excised base. Sternum VII rather wide, apically regularly convex, with fairly deep excision, basally rather deeply excised, basal angles obtusely rounded, lateral parts fairly elongate. Aedeagus short, fairly depressed, in middle rather widened, symmetric. Lower surface almost straight. Apex very wide, symmetric, widely rounded. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres wide, rather triangular, apex shortly rounded, left paramere considerably larger and wider than right.

♀ genitalia (Fig. 209l). Stylomere moderately wide, apex obliquely rounded, lateral border slightly sinuate, with 3 elongate subapical setae. Lateral plate elongate, with 3 elongate apical setae.

Variation. Apart from minor variation in relative shape of pronotum and elytra and of degree of puncturation little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. A specimen collected by me under bark of gum-type eucalypt in 1200 m altitude, some specimens caught in "flight interc. trap". Dated specimens collected in December.

Distribution (Fig. 637). Southeastern corner of New South Wales, adjacent Australian Capital Territory.

Material examined (6). Only the type series.

Etymology. The name refers to the semilunar, red apex of the elytra.

Note. This species is extremely similar to the preceding *A. parumpunctatus*, spec. nov. and is mainly distinguished by the distinct red apex of the elytra. Due to still limited material it is at present not settled, whether these are two fully separated species, or subspecies, or merely colour variants.

Adelotopus gippslandicus, spec. nov.

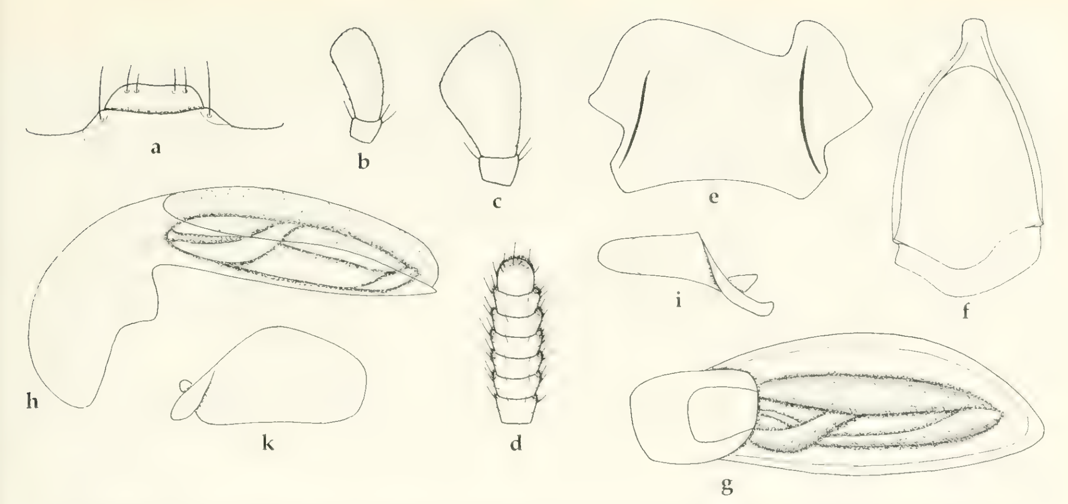
Figs 210, 400, 551

Types. Holotype: ♂, Gippsland (NMV) [fixed on same card with paratype, marked H.T.]. – Paratypes: 1♂, same data (NMV).

Diagnosis. Medium sized, comparatively narrow, little depressed, piceous species with reddish translucent margins of pronotum and elytra and suture. Distinguished from related species by narrower pronotum with narrow lateral margins, shortly rounded basal angles, comparatively elongate elytra, distinct microreticulation on head, dense, fairly coarse, on elytra not rasp-like puncturation, on head dull, otherwise moderately glossy surface, absence of a scutellar pore, short aedeagus with tapering, acute apex, and obtuse basal angles of ♂ sternum VII.

Description

Measurements. Length: 4.8-5.3 mm. Ratios. Width/length of pronotum: 1.62-1.66; width base/apex of pronotum: 1.49-1.51; width pronotum/head: 1.56-1.59; length/width of elytra: c. 1.60-1.65; length elytra/pronotum: 2.77-2.81.



Figs 210a-k. *Adelotopus gippslandicus*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 100.

Colour. Piceous, lateral margins of pronotum and elytra apical and basal margins of pronotum, and suture of elytra indistinctly reddish translucent. Lower surface of head and thorax piceous, abdomen reddish-piceous, becoming posteriorly lighter. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi usually barely darker.

Head (Figs 210a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather wide and short, apex barely concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation distinct, puncturation moderately fine, dense. Surface with a shallow sulcus medially of eyes and usually with some very fine irregular wrinkles, impilose, rather dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 400). Moderately wide, fairly convex, base rather narrow, moderately narrowed to apex. Apical angles liitle produced, at apex obtuse, rather oblique, just surpassing posterior margin of eyes. Apex moderately excised, slightly convex in excision, faintly and somewhat irregularly bordered. Sides moderately curved, widest in basal third. Margins rather narrow, barely explanate, rather coarsely bordered. Basal angles shortly rounded off. Base laterally slightly concave, in middle slightly convex, faintly bordered. Surface near base with extremely shallow transverse impression. Microreticulation superficial, puncturation moserately coarse, dense, surface impilose, moderately glossy.

Elytra (Figs 400, 551). Moderately wide, rather convex, though slightly depressed on disk, in basal half almost parallel, in middle feebly widened, then regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed. Basal border incomplete, attaining almost half of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent or almost so, puncturation moderrately coarse, dense, not at all rasp-like, surface impilose, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex rather wide, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum elongate, c. 2 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta

on either side. Lower surface rather sparsely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 210e-k). Genital ring moderately wide, slightly convex, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather wide, apically regularly convex, with deep excision, basally rather deeply excised, basal angles obtuse, lateral parts fairly elongate. Aedeagus short, fairly depressed, in middle markedly widened, almost symmetric. Lower surface gently convex. Apex tapering, acute. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Right paramere rather narrow and elongate, apex rounded, left paramere considerably larger than right, wide, quadrate, apex transversely cut, though slightly convex.

♀ genitalia. Unknown.

Variation. Little variation only noted in relative width of pronotum and elytra.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown.

Distribution. Gippsland, eastern Victoria. Known only from type locality. No exact locality known.

Material examined (2). Only the holotype and one paratype.

Etymology. The name refers to the type locality of this species.

Adelotopus zonatus Castelnau, 1867

Figs 211, 401, 552, 638

Adelotopus zonatus Castelnau, 1867, p. 32; 1868, p. 118; Notman 1925, p. 8, 30; Csiki 1933, p. 1636; Moore et al. 1987, p. 53.

Types. Lectotype (by present designation): ♂, Melbourne Coll. Castelnau, *Zonatus* Cast. Melb., Holotypus *Adelotopus zonatus* Castelnau, 1867 (MCSN).

Type locality: "Melbourne", Victoria.

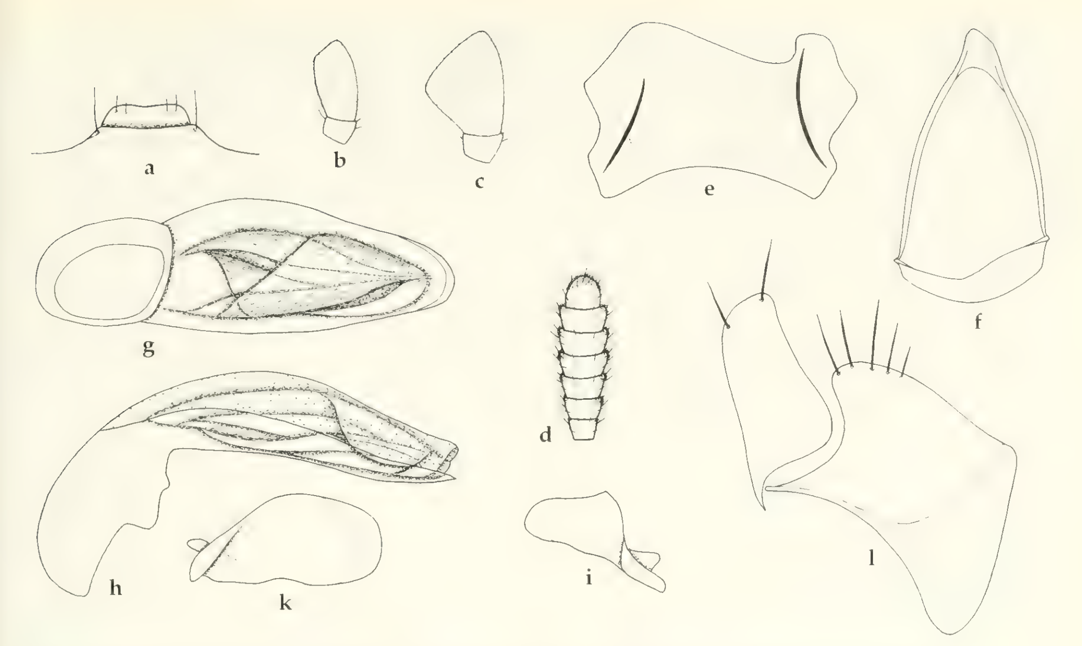
Diagnosis. Small, moderately wide, rather convex black species with a red fascia in basal half of elytra not touching base nor lateral margin, and with wide, semilunar red apex of elytra. Distinguished from similarly coloured species, especially *A. affinis* Castelnau and *A. basirufus*, spec. nov. by narrower shape, black instead of reddish translucent margins of pronotum, more widely black base of elytra, and generally far less coarse puncturation.

Description

Measurements. Length: 3.5-3.9 mm. Ratios. Width/length of pronotum: 1.61-1.65; width base/apex of pronotum: 1.42-1.50; width pronotum/head: 1.54-1.58; length/width of elytra: 1.46-1.53; length elytra/pronotum: 2.46-2.54.

Colour (Fig. 401). Black, basal half of elytra with a common, more or less hourglass-shaped, ligh reddish spot not touching base nor lateral margin, but meeting broadly along suture. Apex of elytra with wide semilunar reddish spot. Lower surface of head and thorax piceous-black to black, abdomen light red. Mouth parts, antennae, and legs red, tibiae and tarsi barely darker.

Head (Figs 211a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight to faintly narrowed behind eyes. Clypeal suture indistinct, semicircular, usually barely indicated. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus rather short, slightly narrowed to



Figs 211a-l. *Adelotopus zonatus* Castelnau. Details of head and genitalia. For legends see fig. 100.

apex, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation absent, puncturation dense and fine. Surface with a shallow sulcus medially of eyes, impilose, very glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 401). Moderately wide, fairly convex, base wide, rather narrowed to apex. Apical angles moderately produced, at apex obtuse, rather oblique, surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, finely bordered. Sides strongly and evenly curved, widest in basal third. Margins rather narrow, barely explanate, faintly bordered. Basal angles widely rounded off. Base straight or even faintly concave, unbordered. Surface near base without transverse impression, though on either side with a shallow, about circular impression. Microreticulation absent, puncturation fine, fairly dense, surface impilose, very glossy.

Elytra (Figs 401, 552). Moderately short and wide, slightly depressed on disk, in basal half almost parallel, behind middle even faintly widened, then obliquely narrowed to apex. Apex wide, transverse to slightly oblique, truncature faintly convex, in middle even slightly drawn in, apical angles shortly rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally moderately wide, moderately concealed, becoming very narrow behind middle. Basal border incomplete, attaining only the outer third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 or rarely 3 closely set pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine, moderately dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum rather elongate, c. 1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta on either side. Lower surface sparsely punctate and shortly pilose.

Legs. Short, 1st tarsomere of protarsus almost 2 × as wide as long, tibial groove of profemur moderately deep, anterior plate straight, narrowly overlapping the groove for apical half, posterior border of groove sharp. Femur comparatively narrow. Metatibia short, c. 4 × as long as wide, 1st tarsomere of metatarsus c. 1.2 × as long as wide.

♂ genitalia (Figs 211e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather large, barely excised base. Sternum VII rather wide, apically obliquely

convex, with deep excision, basally deeply excised, basal angles obtuse, lateral parts rather short. Aedeagus short, fairly depressed, in middle slightly widened, almost symmetric. Basal part elongate and rather bent. Lower surface straight to gently convex. Apex wide, widely rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres short and wide, with more or less rounded apex, left paramere considerably larger than right, somewhat quadrate.

♀ genitalia (Fig. 211l). Stylomere rather elongate, apex obliquely rounded, lateral border straight, with 2-3 elongate subapical setae. Lateral plate fairly short, with 3-5 elongate apical setae.

Variation. Apart from some minor differences of size, extension of pattern, and degree of puncturation, little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Single specimens "in nests of small black tree ants" and mounted together with ants of the genus *Technomyrmex* Mayr on same card. The few dated specimens captured in January, March, October, and November. Only very few specimens collected more recently, hence perhaps today a rare species.

Distribution (Fig. 638). Eastern Victoria, eastern New South Wales, and eastern Queensland north to about Mackay.

Material examined (25). **Vic:** 1♂, *Zonatus* Cast. Melb., *Adelotopus zonatus* Castelnau, lectotype! (MCSN). 1♂, Eltham C. Oke, *Adelotopus zonatus* Cast. (NMV); 2♂♂, 1♀, Beaconsfield C. Oke, *Adelotopus zonatus* Cast. (NMV); 1♀, Carrum F. E. Wilson 16.III.23, F. E. Wilson Collection, det. *zonatus* (NMV); 1♂, Mt. Martha (BMNH); 1♂, F. E. Wilson Collection, *Adelotopus* very near, but possibly not *fasciatus* Cast. (NMV). – **NSW:** 1♂, Sydney, *A. zonatus* Cast. comp. with specimen in H. coll. 26421 (ANIC); 2♂♂, 1♀, *fasciatus* Cast. Sydney, *Adelotopus fasciatus* Cast. (SAMA); 2♂♂, Wahroonga H. J. Carter, *Adelotopus fasciatus* Cast. (ANIC); 1♂, 1♀, Wahroonga H. J. Carter, *Adelotopus fasciatus* Cast., J. C. Goudie Collection (NMV); 1♀, Greta I.1951, J. Sedlacek Collector (CSB); 1♀, 5601 For. Reefs *A. fasciatus* Cast. teste Lea, *Adelotopus fasciatus* Cast. I. 7132 (SAMA); 1♂, Narara, 1.XII.1946 C. Oke (CBM). – **Qld:** 1♂, Brisbane 6.X.04, Koebele Collection (CAS); 1♂, Eungella 900 m, RF, J. H. Sedlacek (CBM). – **Aus:** 1♀, 58.124, *Adelotopus zonatus* Cast. Id. by T. G. Sloane (BMNH). – **?:** 1♀, *zonatus* Cast. 46 Howitt Colln (NMV); 1♀, 47 Howitt Colln, det. *zonatus* (NMV); 1♀ (NMV).

Adelotopus punctatus Castelnau, 1867

Figs 212, 402, 553, 640

Adelotopus punctatus Castelnau, 1867, p. 31; 1868, p. 117; Notman 1925, p. 7, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

Types. Holotype: ♂, Clar. R., *punctatus* Cast., Type, 51, Howitt Colln. (NMV).

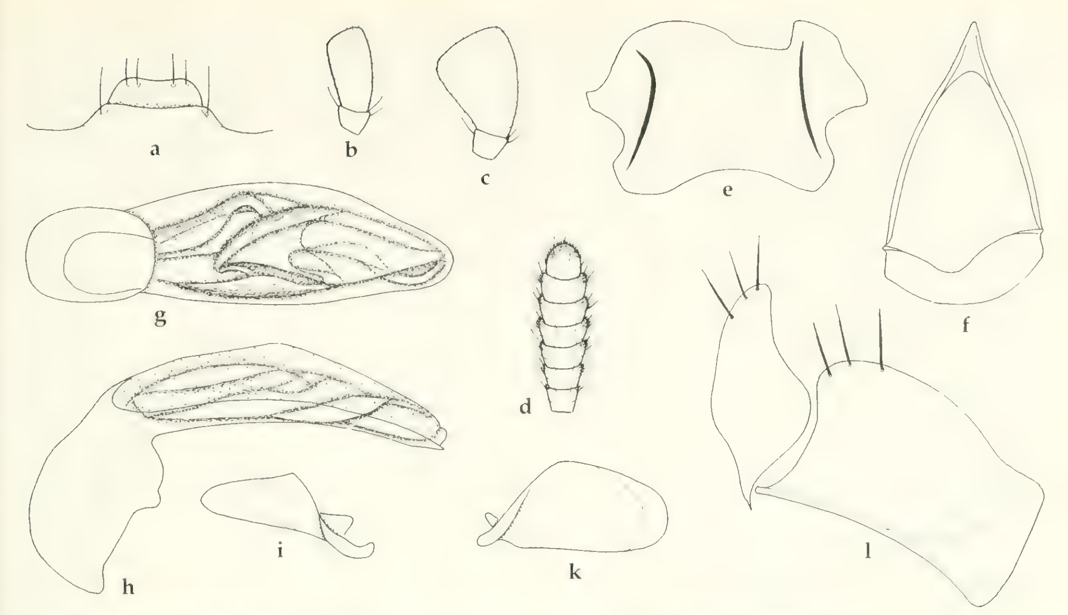
Type locality: "Clarence River", New South Wales.

Diagnosis. Medium sized, comparatively wide, slightly depressed, piceous species with reddish translucent margins and base and apex of pronotum and elytra. Distinguished from related species by wide pronotum with wide, explanate lateral margins and very widely rounded basal angles, almost absent microreticulation, dense, very coarse puncturation, complete, though short pilosity rather glossy surface, absence of a scutellar pore, short, symmetric aedeagus with rounded apex, and elongate stylomere.

Description

Measurements. Length: 4.75-5.25 mm. Ratios. Width/length of pronotum: c. 1.64-1.82 (holotype 1.67); width base/apex of pronotum: c. 1.55-1.68 (holotype 1.58); width pronotum/head: c. 1.62-1.82 (holotype 1.76); length/width of elytra: c. 1.42-1.52 (holotype c. 1.47); length elytra/pronotum: 2.47-2.56 (holotype 2.54).

Note. Since all specimens are in some ways defect or distorted, some ratios, especially those of width/length of pronotum and length/width of elytra are rather tentative.



Figs 212a-l. *Adelotopus punctatus* Castelnau. Details of head and genitalia. For legends see fig. 100.

Colour. Piceous, lateral margins of pronotum and elytra, apical and basal margins of pronotum, and apex of elytra reddish translucent. Lower surface reddish to reddish-piceous. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 212a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, narrowed to apex, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna very short, 8th-9th antennomeres distinctly >2 × as wide as long. Microreticulation indistinct, highly superficial, puncturation dense and very coarse. Surface with a shallow sulcus medially of eyes and usually with some very fine irregular wrinkles, denssely, though shortly pilose, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 402). Rather wide, fairly convex, base rather wide, moderately narrowed to apex. Apical angles moderately produced, at apex obtuse, rather oblique, attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, rather distinctly bordered. Sides evenly curved, widest in basal third. Margins wide, widely explanate, faintly bordered. Basal angles very widely rounded off. Base slightly convex, coarsely bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation coarse and dense, slightly irregular, surface rather densely, though shortly pilose, rather glossy.

Elytra (Figs 402, 553). Moderately wide, rather convex, though slightly depressed on disk, in basal half almost parallel, then regularly narrowed to apex. Apex wide, transverse, truncature slightly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally wide, barely concealed. Basal border incomplete, attaining less than half of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 or 5 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation coarse and dense, surface rather densely, though very shortly pilose, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum fairly elongate, c. 1.7-1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna apparently with 1 elongate seta on either side. Lower surface rather densely punctate and shortly pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide.

♂ genitalia (Figs 212e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather large, deeply excised base. Sternum VII rather wide, apically regularly convex, with deep excision, basally deeply excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus short, fairly depressed, in middle slightly widened, almost symmetric. Lower surface straight to gently concave. Apex moderately wide, rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Right paramere moderately wide, apex rounded, left paramere considerably larger than right, rather wide, somewhat quadrate, apex rounded off.

♀ genitalia (Fig. 212l). Stylomere rather narrow and elongate, apex obliquely rounded, lateral border slightly sinuate, with 3-4 elongate subapical setae. Lateral plate elongate, with 3-5 elongate apical setae.

Variation. Apart from the differences in relative shape noted above as presumably partly due to distorsion of some specimens, little variation has ben noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen caught "from *Mastotermes* workings in *Acacia* tree". So far collected in June and from November to January.

Distribution (Fig. 640). Northeastern New South Wales, eastern Queensland north to about Bowen.

Material examined (6). **NSW:** 1♀, Bellingen I.31 C. Oke, *Adelotopus punctatus* Cast. (NMV); 1♂, Clar. R., *punctatus* Cast., Type, 51 Howitt Colln., holotype ! (NMV). – **Qld:** 1♂, Brisbane Oates, 3903 *Adelotopus punctatus* Cast. ? Queensland (SAMA); 1♀, 16.XI.19 Bribie (CBM); 1♀, Mt. Moffat N. P., Kenniff's Lookout 13.XII.1987 Monteith Thompson Yeates (QMB); 1♀, Rollingstone, 19.03S 146.23E 3.VI.1959, A. H. Whetherly (ANIC).

Adelotopus rufoguttatus (Blackburn, 1893), stat. restit.

Figs 61, 213, 403, 554, 639, 655

Silphomorpha rufoguttata Blackburn 1893, p. 295.
Adelotopus rufoguttatus, Blackburn 1901b, p. 113; Notman 1925, p. 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 49.
Adelotopus bimaculatus Macleay, Blackburn 1901b, p. 113; Notman 1925, p. 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 49 (**synonymy rejected**).
Adelotopus bijugus Darlington 1968, p. 241 (**new synonymy**).

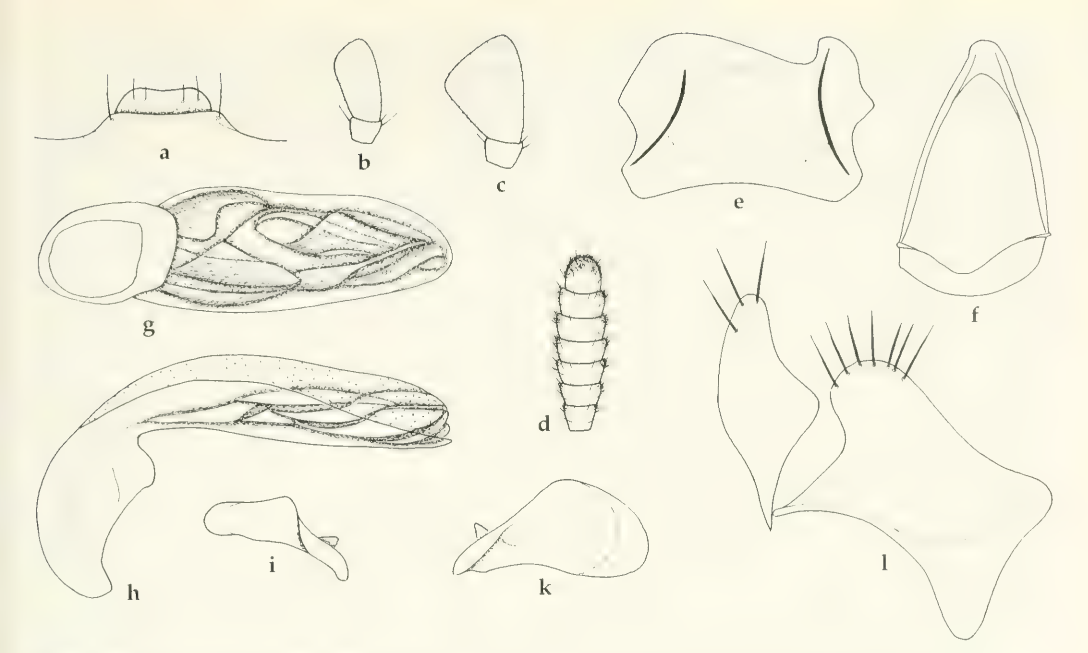
Types. Of *rufoguttatus*. Lectotype (by present designation): ♂, T. 4925 Giles, Type, Blackburn Col. 1910-236., *Silphomorpha rufoguttata*, Blackb. (BMNH).

Of *bijugus*. Holotype: ♂, New Guinea: NE Wau, Morobe Distr. 1200 m, 25.V.1962, Holotype ? *Adelotopus bijugus* Darlington, MCZ Holotype 31529 (MCZ). – Paratypes: 1♂, New Guinea: NE Mt. Missin, 980-1000 m, 14.VIII,'64, J. M. Sedlacek Bishop Paratype *Adelotopus bijugus* D. (BMH); 1♂, New Guinea: NE Wau, Kunai Ck. 1250 m, 27.III.'64, J. Sedlacek Collector Bishop Paratype *Adelotopus bijugus* D. (BMH); 1♀, New Guinea: (NE) Wau, Morobe Distr. 1200 m, 18.XII.1961, J. & J. H. Sedlacek Collectors Bishop Paratype *Adelotopus bijugus* D. (BMH); 1♂, New Guinea: (NE) Wau, Morobe Distr. 1200 m, 1.XII.1961, J. Sedlacek M. V. Light Traps Bishop Paratype *Adelotopus bijugus* D. (BMH).

Type localities. Of *rufoguttatus*: From description: "N. Queensland". – Of *bijugus*: "Wau", Papua New Guinea.

Note. Already Blackburn (1901b) synonymized his species with *A. bimaculatus* Macleay and he was followed by Notman (1925), Csiki (1933), and Moore et al. (1987). Nevertheless, *A. rufoguttuatus* is completely different from *A. bimaculatus*, and hence is herewith reestablished as separate species.

The type specimens of *A. bijugus* Darlington do not show any differences to specimens from



Figs 213a-l. *Adelotopus rufoguttatus* (Blackburn). Details of head and genitalia. For legends see fig. 100.

Australia. One specimen of *A. bijugus* (MCZ) that has been sent as a doubtful paratype, does not belong to the type series according to the description.

Diagnosis. Rather small to medium sized, comparatively wide, slightly depressed, piceous-black species with reddish translucent margins of pronotum and elytra and a red, triagonal spot on basal half of elytra not touching base, margin, and suture. Distinguished from most similar species *A. affinis* Castelnau and *A. basirufus*, spec. nov. by wider pronotum, very coarse, even slightly coriaceous puncturation, complete, though very short pilosity, and less glossy surface.

Description

Measurements. Length: 4.0-5.2 mm. Ratios. Width/length of pronotum: 1.73-1.86; width base/apex of pronotum: 1.54-1.65; width pronotum/head: 1.67-1.84; length/width of elytra: 1.35-1.44; length elytra/pronotum: 2.50-2.55.

Colour (Figs 61, 403). Piceous to piceous-black, lateral margins of pronotum and elytra reddish translucent. Basal half of elytra with a triangular, reddish spot neither touching base, nor lateral margin, nor suture. Lower surface of head and thorax piceous-black, abdomen reddish, lateral margins and apex piceous. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi dark piceous.

Head (Figs 213a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture indistinct, semicircular, usually barely indicated. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, narrowed to apex, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna very short, 8th-9th antennomeres c. 2.5 × as wide as long. Microreticulation highly superficial or even absent, punctuation very dense and coarse. Surface with a shallow sulcus medially of eyes and usually with some fine irregular wrinkles, densely, though extremely shortly pilose, pilosity usually difficult to detect, moderately glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 403). Wide or very wide, fairly convex, base wide, rather narrowed to apex. Apical angles moderately produced, at apex obtuse, rather oblique, usually attaining posterior third of eyes. Apex moderately excised, slightly convex in excision, more or less distinctly bordered. Sides strongly and evenly curved, widest in basal third. Margins wide, fairly widely explanate, faintly bordered. Basal angles very widely rounded off. Base slightly convex, almost unbordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation very dense and coarse, somewhat cotiaceous, because the punctures tend to join to short, irregular rows, surface densely, though very shortly pilose, pilosity difficult to detect, glossy.

Elytra (Figs 61, 403, 554). Rather short and wide, depressed on disk, in basal half almost parallel, then obliquely narrowed to apex. Apex wide, transverse to slightly oblique, truncature faintly convex, in middle even slightly drawn in, apical angles shortly rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally wide, barely concealed, behind middle becoming suddenly very narrow. Basal border incomplete, attaining less than half of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 or rarely 5 closely set pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation dense and coarse, basally even slightly coriaceous, surface rather densely, though very shortly pilose, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum narrow and rather elongate, c. 1.8-1.9 × as long as wide, in posterior third not hollowed. Abdominal sterna apparently without elongate seta. Lower surface rather densely punctate and shortly pilose.

Legs. Short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia rather short, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.2 × as long as wide.

♂ genitalia (Figs 213e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather large, fairly deeply excised base. Sternum VII rather wide, apically regularly convex, with deep excision, basally fairly excised, basal angles obtusely rounded, lateral parts moderately elongate. Aedeagus short, fairly depressed, in middle slightly widened, almost symmetric. Basal part conspicuously elongate and bent. Lower surface straight to gently convex. Apex wide, widely rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Right paramere moderately wide, apex rounded, left paramere considerably larger than right, rather wide, somewhat quadrate, apex rounded off.

♀ genitalia (Fig. 213l). Stylomere moderately elongate, apex rounded, lateral border slightly sinuate, with 3-4 elongate subapical setae. Lateral plate elongate, with 4-7 elongate apical setae.

Variation. Considerable differences in size and in relative width of pronotum and elytra noted. Generally large specimen tend to have a wider pronotum and shorter elytra. Most specimens from north Queensland and New Guinea are large and markedly wide, most specimens from southern Queensland tend to be smaller and narrower. Pattern varies also to some extent.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Few specimens collected by me under bark of river gum, single specimens caught by "M. V. Light Traps" and "Malaise Trap". Dated specimens captured in almost all months except for February.

Distribution (Fig. 639, 655). Northeastern New South Wales, eastern Queensland north to Atherton Tableland, central eastern part of Papua New Guinea, also on Dunk Island off the coast of northeast Queensland; ? Western Australia. The latter record refers to a single specimen labelled "Perth", and is highly doubtful.

Material examined (85). **NSW:** 1♀, Lismore Deuquet (ANIC); 1♂, Clarence R. A. & E. R. Zietz, El so much more conophic than in *ephippiatus*, *Adelotopus* I 7671 (SAMA); 2♂♂, 1♀, Brisbane, Mus I 7671 Clarence R. Ditto (?) 2: N. S. W. (SAMA). – **Qld:** 1♀, Stanthorpe, 30.IV.29 E. Sutton, E. Sutton Coll. (QMB); 1♀, Mitchelton 28.I.72, Brisbane, J. Sedlacek Collector (CSB); 1♀, Brookfield 30.X.1973, J. Sedlacek Collector (CSB); 1♀, Moreton Bay, *affinis* Cast., Ex Musaeo Mniszech (MNHN); 1♂, Flaggy Rock, X.51, J. Sedlacek Collector (CSB); 1♂, Bundaberg, VIII.-IX.1971 H. Frauca (ANIC); 2♂♂, 2♀♀, Bundaberg, Perkins (BMNH); 1♂, Bundaberg Coll. F. Muir VIII.1919 (BMH); 1♀, Biggenden, XII.1972, H. Frauca (ANIC); 2♀♀, 15.XI.1986, 20 km NW of Minto V. R. Bejsak, lgt. (CBS);

2♂♂, 10507, *bimaculat.* Macl. Rockhampton, Ex Museo L. Fairmaire 1896 (MNHN); 1♂, N. Australia Rockhampton, *rufoguttata* Blackb. (BMNH); 1♂, 1♀, Rockhampton (MMS); 1♀, 33, Rockhampton N. Australia Damell, Higgins 1867 (OUM); 1♂, 1♀, Rockhampton, Coll Felsche, det. *bimaculatus* (SMTD); 1♀, 10507, Godeffroy Collection, *Adelotopus bimaculatus* (W. M. L.) Rockhampton (NMV); 2♀♀, Qld 37, Funnel Ck., Clermont-Marlborough-Rd., 17.-18.XI.1990, M. Baehr (CBM); 1♂, 132, Mackay (SAMA); 1♀, Hamlyn Harris, Dunk In[d] V.1914 (QMB); 1♂., Gordonvale I.1950 C. Oke, *Adelotopus bimaculatus* Macl. (NMV); 1♂, Cairns, Wheeler Coll., det. *bimaculatus* (MCZ); 1♀, I'fail X.1919, C. G. B. (SAMA); 3♂♂, Cairns VIII.02 G. R. Griffith Coll. Id. by A. M. Lea (SAMA); 4♂♂, Cairns, Mus I 7670, *Adelotopus* 4700 (SAMA); 1♂, Cairns E. Allen, *Adelotopus* I. 7670 (SAMA); 1♀, Cairns Hacker, Coll. Hacker, *Adelotopus rufoguttata* Blkb. Id. by T. G. Sloane, det. *bimaculata* (DEIB); 1♂, Kuranda Hacker, Coll. Hacker, *Adelotopus rufoguttata* Blkb. Id. by T. G. Sloane, *A. bimaculata* M. L. (DEIB); 1♂, Kuranda I.53. G. B., J. G. Brooks Bequest, 1976, *bimaculatus* Macl. 1574 (ANIC); 2♀♀, Kuranda, Black Mountain Rd., 22.VIII.1969, James E. Tobler (CAS); 1♂, 1♀, Hann Tableland 83 km NNW of Mareeba 5.XI.-5.XII.93 S. De Faveri (DPIM). – **WA:** 1♀, Perth, B Lae Beacon 1.I.34, E. Sutton Coll. (QMB). – **NG:** 1♀, Wau 15.VIII.61, Sedlacek don, does not fit description of Paratype's label data. May not be paratype, det. *bijugus* (MCZ); 1♀, Wau, Morobe Distr. 1050 m, 19.IX.1961, J. Sedlacek Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH); 1♂, Wau, Morobe Distr. 1200 m, 25.V.1962, Holotype ? *Adelotopus bijugus* Darlington (MCZ); 1♀, Wau, Morobe Distr. 1200 m, 18.XII.1961, J. & J. H. Sedlacek Collectors Paratype *Adelotopus bijugus* D. (BMH); 1♂, Wau, Morobe Distr. 1200 m, 1.XII.1961, J. Sedlacek Paratype *Adelotopus bijugus* D. (BMH); 1♂, 7♀♀, Wau, Morobe Distr. 1200 m, 15.VIII.1961, 27.X.1961, 11.-20.XI.61, 15.-22.XI.61, 7.-16.XII.61, 18.-25.VI.62, 1.I.1963, 3.-4.I.1963, J. Sedlacek Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH, CBM); 2♂♂, 1♀, Wau, Morobe Distr. 1250 m, 3.I.1963, 11.I.1963, J. Sedlacek Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH); 1♂, Wau, Morobe Distr. 1300 m, 21.VIII.1961, J. Sedlacek Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH); 1♀, Wau, Morobe Distr. 1250-1300 m, 20.VIII.1961, J. Sedlacek Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH); 1♀, Wau 1974, J. Sedlacek Collector (CSB); 1♂, Wau, Kunai Ck. 1250 m, 27.III.64, J. Sedlacek Collector Paratype *Adelotopus bijugus* D. (BMH); 1♂, Mt. Missim, 980-1000 m, 14.VIII.64, J. M. Sedlacek Paratype *Adelotopus bijugus* D. (BMH); 1♀, Bulolo, 800-900 m, 14.XI.1961, J. &. M. Sedlacek Collectors, *Adelotopus bijugus* Darligton det. G. E. Ball, 1989 (BMH); 1♀, Bulolo, 1010 m, 15.VIII.1956, E. J. Ford, J. Collector, *Adelotopus bijugus* Darlington det. G. E. Ball, 1989 (BMH). – **Aus:** 1♀, 7042, det. *ephippiatus* (BMNH). – **?:** 1♂, T. 4925 Giles, Type, Blackburn Col. 1910-236., *Silphomorpha rufoguttata*, Blackb. (BMNH); 1♂, B.worth (?) (NMV); 2♀♀, *bimaculatus*, Ex Museo Van Lansberge (MNHN); 1♀, Dodd 23.III.11 (ANIC); 1♀, C. Oke Collection, no locality (NMV); 1♂, *Adelotopus bimaculatus* M.L. dét. P. Dupuis, *Adelotopus bimaculatus* M.L. (IRSNB); 1♂, spec. (MNHB); 1♀ (MNHB); 1♂ (NMV).

Adelotopus affinis Castelnau, 1867

Figs 62, 214, 404, 555, 641

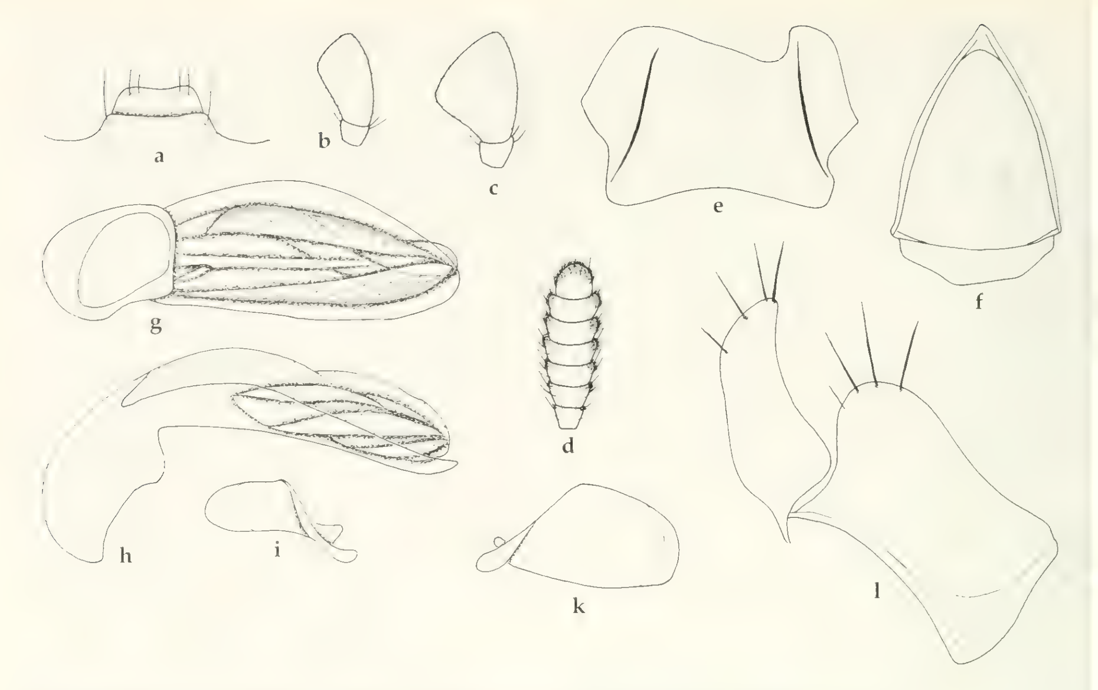
Adelotopus affinis Castelnau, 1867, p. 32; 1868, p. 118; Notman 1925, p. 8, 10, 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 49.

Types. The single specimen bearing the handwritten label with the correct type locality is missing from the card and certainly lost. There are, however, two specimens with a handwritten label "N.S.W." (Castelnau's hand) not belonging to the type series, but apparently included by Castelnau himself in the series of *affinis* in his possession. Because the specimens agree well with the description, I am sure that they belong to this species. Hence, I designate the ♂ specimen the neotype of *affinis* Castelnau.

Neotype (by present designation): ♂, N.S.W., New South Wales Coll. Castelnau, *affinis* Cast. (Gestro's hand), *Adelotopus affinis* Cast. det. Castelnau (MCSN).

Type locality. From description: "Sydney", New South Wales. – From label of neotype: "N.S.W.", New South Wales.

Diagnosis. Rather small, comparatively wide, slightly depressed, black species with reddish translucent margins of pronotum and a red, triagonal spot on basal half of elytra not touching base and margin, but broadly touching along suture. Distinguished from most closely related species *A. rufoguttatus* (Blackburn) by lesser size, pattern, less wide pronotum, absence of microreticulation, less coarse and not coriaceous puncturation, absence of pilosity, and highly glossy surface; and from similarly closely related *A. basirufus*, spec. nov. by lesser size, pattern, and denser and coarser puncturation.



Figs 214a-l. *Adelotopus affinis* Castelnau. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 4.0-4.35 mm. Ratios. Width/length of pronotum: 1.69-1.78; width base/apex of pronotum: 1.53-1.61; width pronotum/head: 1.66-1.75; length/width of elytra: 1.32-1.36; length elytra/pronotum: 2.34-2.40.

Colour (Figs 62, 404). Black, lateral margins of pronotum faintly reddish translucent. Basal half of elytra with a more or less triangular, reddish spot not touching base nor lateral margin, but meeting broadly along suture. Apex of elytra narrowly reddish. Lower surface of head and thorax black, abdomen light red. Mouth parts, antennae, and legs red, tibiae and tarsi barely darker.

Head (Figs 214a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture indistinct, semicircular, usually barely indicated. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, narrowed to apex, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation absent, puncturation dense and rather coarse. Surface with a shallow sulcus medially of eyes and usually with some fine irregular wrinkles, apparently impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 404). Rather wide, fairly convex, base wide, rather narrowed to apex. Apical angles moderately produced, at apex obtuse rounded, rather oblique, surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, more or less distinctly bordered. Sides strongly and evenly curved, widest in basal third. Margins rather wide, moderately explanate, faintly bordered. Basal angles rather widely rounded off. Base slightly convex, almost unbordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation very dense and moderately coarse, not coriaceous, surface apparently impilose, very glossy.

Elytra (Figs 62, 404, 555). Rather short and wide, depressed on disk, in basal half almost parallel, then evenly narrowed to apex. Apex wide, transverse to slightly oblique, truncature faintly convex, in middle even slightly drawn in, apical angles shortly rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally wide, barely concealed, behind middle narrowing. Basal border incomplete, attaining about half of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 or rarely 3 or even 2 closely set pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation dense and fairly coarse, not coriaceous, surface impilose, highly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum fairly elongate, c. 1.8 × as long as wide, in posterior third not hollowed. Abdominal sterna apparently without elongate seta. Lower surface rather densely punctate and shortly pilose.

Legs. Rather hort, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia rather short, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide.

♂ genitalia (Figs 214e-k). Genital ring moderately wide, rather triangular, barely asymmetric, with slightly asymmetric, rather large, barely excised base. Sternum VII rather wide, apically obliquely convex, with deep excision, basally fairly excised, basal angles rounded, lateral parts rather short . Aedeagus short, fairly depressed, in middle slightly widened, slightly asymmetric. Basal part elongate and rather bent. Lower surface straight to gently convex. Apex wide, widely rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres short and wide, with more or less rounded apex, left paramere considerably larger than right, somewhat quadrate.

♀ genitalia (Fig. 214l). Stylomere rather elongate, apex obliquely rounded, lateral border sinuate, with 2-4 elongate subapical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. Apart from some differences in relative width of pronotum and in shape of elytral spot, little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen collected by me under bark of gum-type eucalypt, the specimens from Deception Bay mounted together with ants of the genus *Tapinoma* Förster on the same card. Dated specimens captured in January, February, July, and November.

Distribution (Fig. 641). Northern half of New South Wales, southeastern Queensland.

Material examined (11). **NSW:** 1♀, K 12235, *Adelotopus fasciatus* Casteln. Sydney (MMS); 1♂, *affinis* Cast., Coll. Castelnau, *Adelotopus affinis* Cast. det. Castelnau, neotype! (MCSN); 1♀, Coll. Castelnau, *Adelotopus affinis* Cast. det. Castelnau (MCSN). – **Qld:** 1♂, Gold Ck. Brisbane 26.II.71 A. M. Broadky, M. 1192, *Adelotopus bimaculatus* Macl. det. J. F. Donaldson, 1974 (DPIM); 1♀, Mitchelton 28.I.72, Brisbane, J. Sedlacek Collector (CSB); 1♂, Qld 67, 10 km nw. Canungra, 25.XI.1990, M. Baehr (CBM); 1♂, 3♀♀, Deception Bay 15.VII.63, S. E. Q. G. Monteith (UQIC). – **Aus:** 1♂ (defect), 58.124 (BMNH).

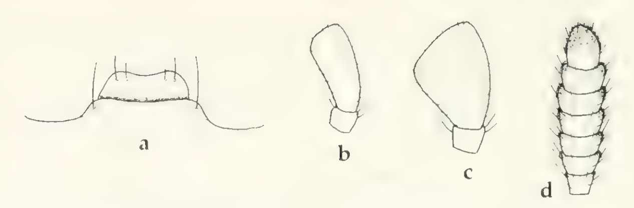
Adelotopus basirufus, spec. nov.

Figs 215, 405, 556, 641

Types. Holotype: ♀, (defect), Ben Lomond H. J. C. 1913.10 (ANIC). – Paratype: 1♀, (defect, ?sex), N. S. Wales, Armidale (MMS).

Note. Both types were badly damaged by anthrene beetles which destroyed the internal parts, the apical part of the abdomen, the apex and part or the whole of the right elytron, and some legs, in the paratype also most of head. In the paratype the sex is thus rather doubtful.

Diagnosis. Medium sized, moderately wide, rather convex black species with reddish translucent lateral margins of pronotum and very narrowly black, or even completely red base (including lateral margin) and semilunar red apex of elytra. Distinguished from related species, especially *A. affinis* by red instead of black base of elytra, wider pronotum, and less coarse puncturation.



Figs 215a-d. *Adelotopus basirufus*, spec. nov. Details of head. For legends see fig. 100.

Description

Measurements. Length: c. 4.5-4.7 mm. Ratios. Width/length of pronotum: 1.73-1.76; width base/apex of pronotum: 1.58-1.61; width pronotum/head: 1.72-1.73; length/width of elytra: c. 1.42-1.43; length elytra/pronotum: c. 2.42-2.46.

Colour (Fig. 405). Black, lateral margins of pronotum narrowly reddish translucent. Basal half and apex of elytra light reddish, the margin of the black centre at suture slightly produced anteriorly, the posterior border convex. Lower surface of head and thorax reddish-piceous, of abdomen reddish. Mouth parts, antennae, and legs reddish.

Head (Figs 215a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture indistinct, semicircular, barely indicated. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, narrowed to apex, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation absent, puncturation fairly dense and moderately fine. Surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field sparsely punctate and setose. Gula apparently sparsely setose.

Pronotum (Fig. 405). Rather wide, fairly convex, base rather wide, moderately narrowed to apex. Apical angles little produced, at apex obtuse, very oblique, just surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, distinctly bordered. Sides evenly curved, widest near basal angles. Margins fairly wide, slightly explanate, faintly bordered. Basal angles very widely rounded off. Base slightly convex, unbordered. Surface near base without distinct transverse impression. Microreticulation absent, puncturation dense, though but moderately coarse, slightly irregular, surface impilose, glossy.

Elytra (Figs 405, 556). Rather short and wide, rather convex, though slightly depressed on disk, in basal half almost parallel, in middle even faintly widened, then regularly narrowed to apex. Apex apparently wide, truncature broken. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel basally wide, barely concealed. Basal border incomplete, attaining about half of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 4 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation moderately coarse and fairly dense, surface impilose, highly glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over without angle from ventral surface, rather setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third not hollowed. Abdominal sterna apparently with 1 elongate seta on either side. Sternum VI unknown. Lower surface unknown.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia. Unknown.

Variation. Little noted. In paratype reddish base of elytra even more accentuated, puncturation of surface slightly coarser than in holotype.

Vivipary. Not confirmed due to lack of intact females.

Habits. Unknown.

Distribution (Fig. 641). Northeastern New South Wales. Known only from the closeby type localities.

Material examined (2). Only the holotype and the paratype.

Etymology. The name refers to the completely red base of the elytra.

Adelotopus macilentus, spec nov.
Figs 216, 406, 557, 642

Types. Holotype: ♂, Brisbane H. Hacker 3/7/11 (QMB T26061). – Paratypes: 1♂, 1♀, Hattah, Vic. C. Oke Nov,1924 (NMV); 1♂, 1♀, Lake Hattah Victoria J. E. Dixon, F. E. Wilson Collection (NMV); 1♀, Portland V. 4.1.38. C. Oke (NMV); 2♀♀, Portland, V., J. E. Wilson (ANIC); 1♂, Gellibrand, Vic. 19-23 Jan.1932 F. E. Wilson, F. E. Wilson Collection, N. Sp. with *bimaculatus* in Notmans table. but 4.5 mm punctate Apex of Elyt. Red. (NMV); 1♂, 1♀, Ferntree G. 2.6.20 V. C. Oke (NMV); 1♀, Murrabit, Vic 31.3.1946 C. Oke (NMV); 1♂, R. Isis, Tas, Griffith Collection, Id. by A. M. Lea, *Adelotopus* Tas. 1535 (SAMA); 1♀, Australia: Lyneham A.C.T., II.74, B. P. Moore (CMC); 1♂ (?), North Canberra ACT. 8.Jan.1972 K. R. Pullen, Kim Pullen Collection (ANIC); 1♀, Australia. Tharwa A.C.T. 6.X.63 B. P. Moore (CMC); 1♀, Australia: Gundaroo Rd. pro party N.S.W. 21.I.73 B. P. Moore (CMC); 1♂, Illawarra H.J.C., Should be n. sp. H.E.C., Not *fasciatus* or *zonatus* from spec in How. coll. H.G.07 (ANIC); 1♀, Wahroonga, N.S.W. H. J. Carter (ANIC); 1♂, Australia Orange, N.S.Wales A. Koebele (CAS); 1♂, 4♀♀, Sydney (MMS); 1♂, Blue Mts. N.S.W., 4.12.46 C. Oke (NMV); 2♂♂, Australia: Greta, N.S.W., XI.1951 J. Sedlacek (CSB); 1♀, N.S.Wales (MNHN); 1♂ (?), Tambourine Illidge (UQIC); 1♂, Fletcher, Q. E. Sutton, E. Sutton Coll. 1964 (QMB); 1♂, 2♀♀, Australien, Qld 2, 5 km s. Ipswich, 4.11.1990, M. Baehr (CBM); 1♀, *Adelotopus bimaculatus* M^c^L. Bris. (UQIC); 1♀, Brisbane Illidge (UQIC); 1♀, Brisbane (QMB); 1♂, 1♀, Indo'pilly 9.1.31, *maculipennis* Macl. 1591, J. G. Brooks Bequest, 1976 (ANIC); 1♀, Queensland, Brookfield 1973, J. Sedlacek Collector (CSB); 1♀, Queensland: Emu Ck. 24.XI.1974, J. Sedlacek Collector (CSB); 1♂, Petrie, Q. 30.IX.62 G. Monteith (UQIC); 1♀, Greenbank Qld, 8.I.63 G. Monteith (UQIC); 1♂, Australien, Qld 54, Bouyal Ck., 30 km s. Gin Gin, 21.11.990, M. Baehr (CBM); 1♂, 1♀, Australien, Qld 52, Currajong Ck., 5 km s. Gin Gin, 21.11.1990, M. Baehr (CBM); 1♀, K 12233, *Adelotopus maculipennis* Gayndah N.S.W. (AMS); 1♀, Australien, Qld 27, Rolf Ck., 134 km n. Dingo, Fitzroy Dev. Rd., 12.11.1990, M. Baehr (CBM); 1♂, Blackdown Tblnd Qld, 8.XII.82 J. H. Sedlacek (CSB); 1♂, Cairns 8/07 GR (SAMA); 1♀, Evelyn Qld 31.X.1967 R. J. Elder (ANIC); 1♀, Ex Oil Bath trap: Evelyn 24.8.65. RJE, *Adelotopus bimaculatus* Macl. (DPIM); 1♂, N. Holl. Q'land, Janson Acq. 1884 (MNHN); 1♀, V. de Poll (ANIC); 1 (defect, sex ?) (NMV).

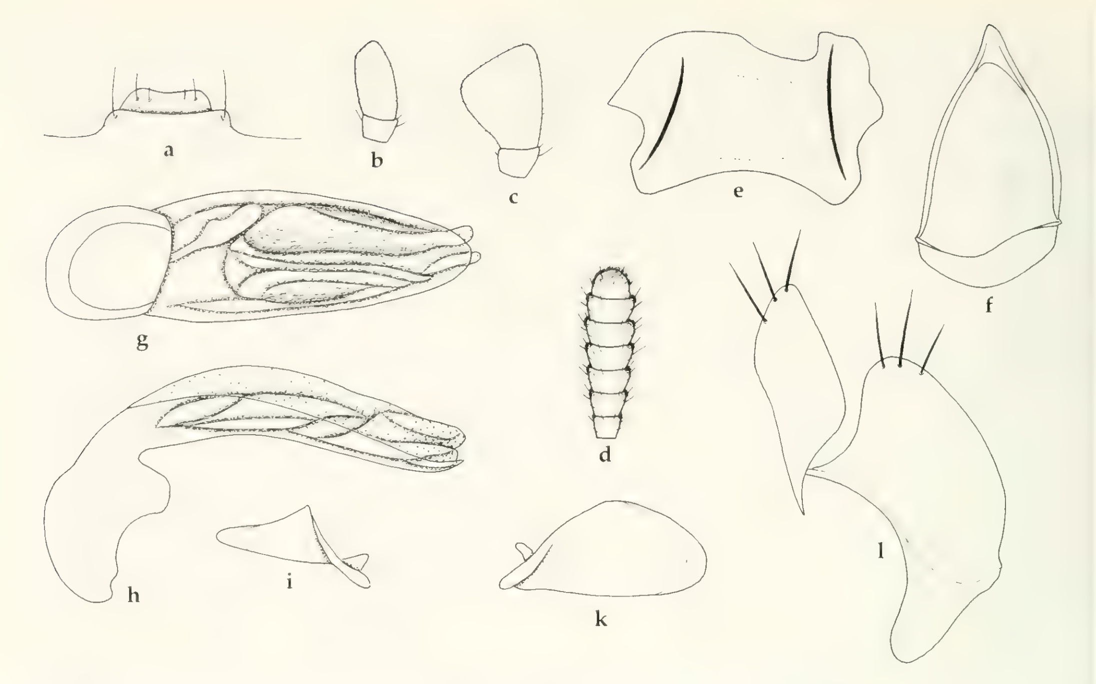
Diagnosis. Rather small, elongate, depressed, piceous-black species with reddish translucent lateral margins of pronotum and elytra and with a small, triangular, reddish spot in basal half of each elytron.

Description

Measurements. Length: 3.8-4.65 mm. Ratios. Width/length of pronotum: 1.4-1.6; width base/apex of pronotum: 1.27-1.34; width pronotum/head: 1.39-1.48; length/width of elytra: 1.62-1.70; length elytra/pronotum: 2.52-2.72.

Colour (Fig. 406). Piceous to piceous-black, lateral margins of pronotum and elytra, basal and apical margins of pronotum and sometimes also apex of elytra more or less distinctly reddish translucent. Basal half of each elytron with a more or less triangular, reddish spot of variable size not touching base, nor lateral margin, nor suture. Rarely this spot absent. Lower surface of head and thorax piceous, abdomen light red. Mouth parts, antennae, and legs red, tibiae and tarsi barely darker.

Head (Figs 216a-d). Moderately short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders almost straight behind eyes. Clypeal suture distinct, semicircular, not interrupted. Labrum rather wide and short, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex obtusely rounded. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, slightly narrowed to apex, not securiform. Terminal palpomere of labial palpus moderately wide, though barely securiform. Antenna very short, 8th-9th antennomeres almost 3 × as wide as long. Microreticulation dense and coarse, puncturation rather



Figs 216a-l. *Adelotopus macilentus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

dense and more or less coarse, usually somewhat rugose. Surface with a shallow sulcus medially of eyes and sometimes with some irregular wrinkles, apparently impilose, markedly dull. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and sparsely setose. Gula sparsely setose.

Pronotum (Fig. 406). Rather narrow, depressed on disk, base not much wider than apex. Apical angles not much produced, at apex rounded, rather oblique, attaining or just surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, barely bordered. Sides gently curved, widest in basal third. Margins fairly wide, slightly explanate, faintly bordered. Basal angles moderately widely rounded off. Base almost straight, bordered. Surface near base without transverse impression. Microreticulation dense and coarse, puncturation rather dense and coarse, rather coriaceous, surface apparently impilose, dull.

Elytra (Figs 406, 557). Elongate and rather narrow, depressed on disk, in basal half almost parallel, behind middle faintly widened, then slightly narrowed to apex. Apex very wide, transverse to slightly oblique, truncature straight to faintly convex, in middle even slightly drawn in, apical angles shortly rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow throughout, rather concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Scutellar pore absent. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae fairly short. Scutellar pore present, conspicuous. Striae including sutural stria absent, though sometimes in apical half punctures arranged to irregular rows. Microreticulation present, though rather superficial, puncturation coarse and rather dense, in apical half sometimes slightly coriaceous, surface impilose, moderately glossy.

Lower surface. Prosternal process rather elongate, moderately wide, gently convex, apex narrow, gently convex, passing over in an open angle from ventral surface, rather setose. Metepisternum elongate, c. 2.2 × as long as wide, in posterior third not hollowed, but longitudinally somewhat hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface rather densely punctate and shortly pilose.

Legs. Short, 1st tarsomere of protarsus c. 2 × as wide as long, tibial groove of profemur moderately deep, anterior plate straight, narrowly overlapping the groove for apical half, posterior border of groove sharp. Femur comparatively narrow. Metatibia short, <4 × as long as wide, 1st tarsomere of metatarsus almost as long as wide.

♂ genitalia (Figs 216e-k). Genital ring moderately wide, rather triangular, slightly asymmetric, with slightly asymmetric, rather large, barely excised base. Sternum VII rather wide, apically almost straight, with deep excision, basally deeply excised, basal angles obtusely rounded, lateral parts rather short. Aedeagus short, fairly depressed, in middle slightly widened, almost symmetric. Basal part elongate and rather bent. Lower surface gently convex. Apex rather wide, rounded off. Orifice very elongate, internal sac moderately complex, without a distinct oblique fold near apex. Right paramere short, triangular, with rather acute apex, left paramere considerably larger than right, wide, with widely rounded apex.

♀ genitalia (Fig. 216l). Stylomere rather elongate, apex obliquely rounded, lateral border straight, with 2-3 elongate subapical setae. Lateral plate elongate, with 3-4 elongate apical setae.

Variation. There is considerable variation of size, size of the elytral spot which may occupy almost ⅗ of the elytral length, or may be even completely absent, relative width of pronotum, and coarseness and degree of rugosity of puncturation.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Little known. Specimens collected by me under bark of different gum-type eucalypts, one specimen caught "ex Oil Bath trap". Dated specimens captured from June to March.

Distribution (Fig. 642). Victoria, Australian Capital Territory, New South Wales, eastern Queensland, apparently north to Atherton Tableland and also Tasmania (both latter areas known from a single old record each).

Material examined (55). Only the type series.

Etymology. The name refers to the narrow, elongate body shape.

punctulifer-group

Diagnosis. Medium-sized, convex, black species with red apex. Labrum quadrisetose; glossa c. 16-setose; lateral margin of pronotum narrow, not explanate, basal angle shortly rounded off; basal border line of elytra incomplete, ending halfways to suture; scutellar pore absent; lateral margin of elytra narrow, without elongate setae behind shoulders; series of lateral pores with 6 subhumeral pores only; abdominal sterna with 2 ambulatory setae on either side; sternum VI without longer setae at apical margin; tibiae, especially metatibia depressed; all femora including profemur wide and depressed; aedeagus narrow, rather symmetric, with narrowly rounded apex; internal sac of aedeagus with oblique band near apex that bears markedly elongate spines.

Larva. Unknown.

Distribution. A single species in eastern New South Wales and the southern half of eastern Queensland.

Systematic position. This groups is perhaps rather closely related to the *gyrinoides*-group, it is, however, more apomorphic in the narrow lateral margin of pronotum and elytra and the conspicuously spinose oblique band in the apical part of the internal sac of the aedeagus.

Adelotopus punctulifer, spec. nov.

Figs 63, 217, 407, 558, 643

Types. Holotype: ♂, Hunter R. N. S. Wales (MMS). – Paratypes: 1♀, Pt. Macquarie, NSW May 66. K. Pullen (ANIC); 1♀, Brisbane, H. Hacker, 7.11.16 (QMB); 1♀, Acacia Rge Qld, 14 Jan 1961, E. C. Dahms (UQIC); 1♂, Australien, Qld 42, 25 km w. Marlborough, 18.11.1990, M. Baehr (CBM); 1♂, 1♀, Australien, Qld 49, 10 km se Mt. Larcom, 20.11.1990, M. Baehr (CBM).

Diagnosis. Medium sized, parallel, convex, black species with wide, well delimited, reddish apex of elytra the border of which is anteriorly straight. Further distinguished from related species by narrow pronotum with rather narrow lateral margins and shortly rounded basal angles, reduced microreticulation, and narrow, rather symmetric aedeagus with an conspicuously dentate fold in internal sac.

Description

Measurements. Length: 5.15-5.7 mm. Ratios. Width/length of pronotum: 1.50-1.62; width base/apex of pronotum: 1.45-1.50; width pronotum/head: 1.49-1.56; length/width of elytra: 1.56-1.68; length elytra/pronotum: 2.54-2.60.

Colour (Figs 63, 407). Black, elytra with rather wide, well defined red apex, the anterior border of which is straight. Lower surface of head and thorax dark piceous, of abdomen reddish. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi slightly darker.

Head (Figs 217a-d). Short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally feebly projecting, lateral borders faintly oblique. Clypeal suture semicircular, in middle slightly interrupted. Labrum rather large, apex faintly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with weakly carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, though not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna short, 8th-9th antennomeres >2 × as wide as long. Microreticulation fine, though rather distinct, puncturation very fine, rather difficult to detect, fairly dense. Surface with a shallow sulcus medially of eyes, impilose, moderately glossy, slightly silky. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula apparently asetose.

Pronotum (Fig. 407). Rather narrow, convex, base rather narrow, narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, not attaining posterior third of eyes. Apex moderately excised, convex in excision, laterally faintly bordered, in middle almost unbordered. Sides evenly curved throughout, widest at base. Margins very narrow, not explanate, faintly bordered. Basal angles shortly rounded off. Base almost straight, distinctly bordered. Surface near base without transverse impression. Microreticulation very fine and superficial, puncturation rather fine, fairly dense, surface impilose, glossy.

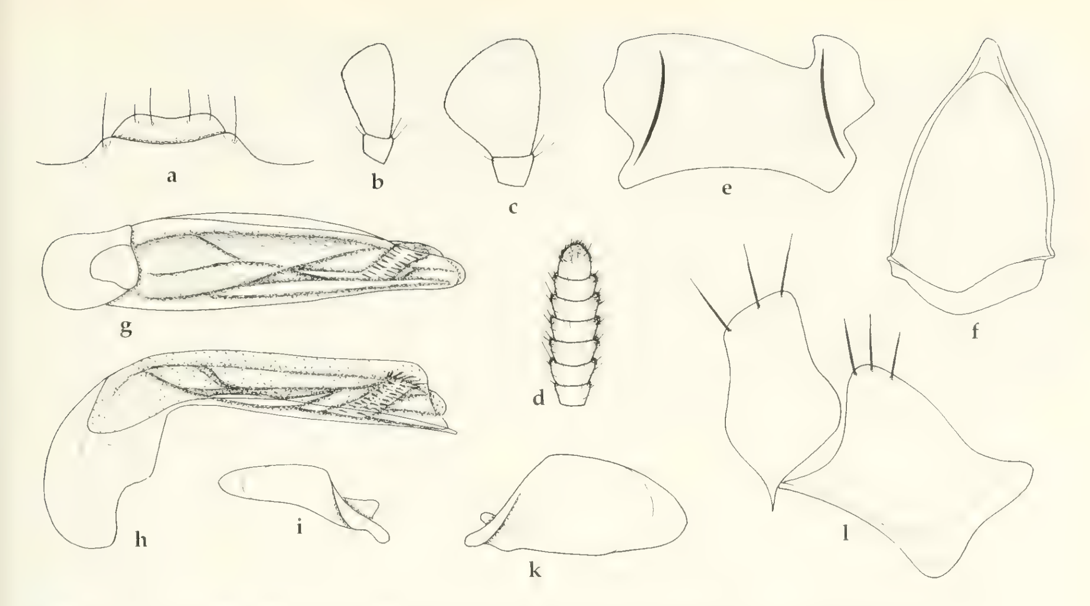
Elytra (Figs 63, 407, 558). Rather elongate, convex, margins basally almost parallel, apically evenly narrowed to apex, faintly convex throughout. Apex rather wide, slightly oblique, truncature faintly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow, partly concealed. Basal border incomplete, ending halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6 closely set pores behind shoulder only. Setae rather short. Striae including sutural stria absent, sometimes vaguely indicated by irregular rows of slightly larger punctures. Microreticulation almost absent, only faintest traces visible, puncturation fine, dense, becoming slightly coarser towards apex, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, fairly wide, straight, gently convex, apex wide and rather short, margin depressed, slightly convex, rather setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third faintly obliquely bent and hollowed. Abdominal sterna with 2 elongate setae on either side. Sternum VI without longer setae along apical border. Lower surface mderately punctate and pilose.

Legs. Medium-sized, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical ⅔, posterior border of groove sharp. Femur wide. Metatibia medium-sized, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus not widened.

♂ genitalia (Figs 217e-k). Genital ring rather wide, slightly asymmetric, with slightly asymmetric, little excised base. Sternum VII rather wide, apically obliquely convex, with rather deep excision, basally excised, lateral parts rather short. Aedeagus moderately elongate, fairly depressed, in middle barely widened, rather symmetric. Lower surface almost straight. Apex rather narrow, rounded off. Orifice short, internal sac fairly complex, with a narrow, oblique fold near apex that is furnished with conspicuous, elongate spines. Right paramere narrow, elongate, with shortly rounded apex, left wide, considerably larger than right, tapering, with widely rounded apex.

♀ genitalia (Fig. 217l). Stylomere rather wide, apex wide, obliquely transverse or rather convex, with 2-3 more elongate and additional 0-2 short subapical setae. Lateral plate rather short, with 2-3 elongate apical setae.



Figs 217a-l. *Adelotopus punctulifer*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Variation. Little variation noted.
Vivipary. Not confirmed in the examined material.

Habits. Little known. Specimens collected by me under bark of river gums. So far captured in January, May, and November.

Distribution (Fig. 643). Eastern New South Wales from north of Sydney to eastern Queensland north of Rockhampton.

Material examined (7). Only the types series.

Etymology. The name refers to the fine but dense puncturation of surface.

analis-group

Diagnosis. Rather small, fairly wide, fairly depressed, black species with distinct reddish apex. Surface very coarsely punctate and very with elongate, erect, hirsute hairs; labrum quadrisetose; glossa c. 12-setose; lateral margin of pronotum rather explanate; basal border line of elytra abbreviated, reaching less than halfways to suture; scutellar pore present; lateral margin of elytra without elongate setae; series of umbilical pores with 4 subhumeral pores only; abdominal sterna with 2 ambulatory setae each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; internal sac of aedeagus complicate, without an oblique fold near apex.

Larva. Unknown.

Distribution. A single species from central southeastern Queensland.

Systematic position. This group is probably rather closely related to the *gyrinoides*-group. It is perhaps more plesiomorphic in the presence of the scutellar pore, smaller number of glossal setae, and larger number of ambulatory setae of the abdomen. However, it is more arpomorphic in the hirsute surface, presence of pattern, and small number of umbilical pores of elytra.

Adelotopus analis Macleay, 1871

Figs 64, 218, 408, 559, 643

Adelotopus analis Macleay, 1871, p. 95; Notman 1925, p. 6, 28; Csiki 1933, p. 1634; Moore et al. 1987, p. 49.

Types. Lectotype (by present designation): ♀, K 12229, *Adelotopus analis* M^c L. W. Gayndah Holotype (AMS).

Type locality: "Gayndah", Queensland.

Note. There exists an additional syntype of *analis* which, however, is actually conspecific with *A. seriepunctatus* Notman.

Diagnosis. Small, elongate, black species with wide, well defined reddish apex of elytra. Distinguished from all other species except for *A. villosus*, spec. nov. by the extremely coarse puncturation and the remarkably hirsute surface. Distinguished from *A. villosus* by pattern, presence of scutellar pore, at apex and base about equally wide pronotum, and parallel shape of elytra.

Description

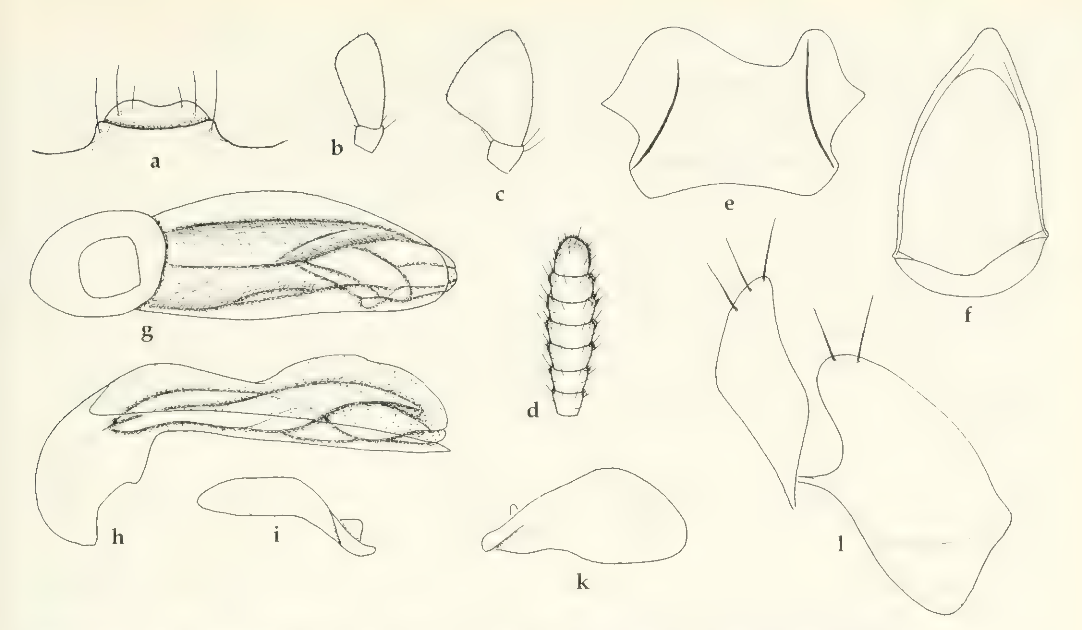
Measurements. Length: 4.1-4.4 mm. Ratios. Width/length of pronotum: 1.55-1.64; width base/apex of pronotum: 1.20-1.23; width pronotum/head: 1.44-1.47; length/width of elytra: 1.58-1.64; length elytra/pronotum: 2.59-2.73.

Colour (Figs 64, 408). Black, margins of pronotum faintly reddish translucent, elytra with rather wide, well defined red apex the anterior border of which is faintly oblique. Lower surface of head and thorax piceous-black, abdomen reddish. Mouth parts, antennae, and legs reddish.

Head (Figs 218a-d). Moderately short and wide, rather convex. Anterior border markedly convex, lateral angle rounded, laterally barely projecting, lateral borders but faintly oblique. Clypeal suture absent. Labrum rather large, moderately wide, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with sharply carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus slightly widened, not securiform. Terminal palpomere of labial palpus wide, securiform. Antenna moderately elongate, 8th-9th antennomeres c. 1.8 × as wide as long. Microreticulation absent, puncturation double, a very coarse one, and in the space between the coarse punctures an extremely fine, fairly dense one. Surface with a shallow sulcus medially of eyes, glossy, with elongate, erect hairs arising from the coarse punctures. Ventrolaterally of eyes with a row of rather elongate setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 408). Rather wide, moderately convex, base but little wider than apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, rather convex in excision, faintly and somewhat irregularly bordered. Sides markedly and evenly curved throughout, widest in middle. Margins wide, rather explanate, anteriorly strongly bordered, slightly crenulate. Basal angles very widely rounded off. Base faintly convex, distinctly bordered. Surface near base with very shallow transverse impression. Microreticulation absent, puncturation double, a very coarse one, in the space between the coarse punctures a far less coarse, moderately dense puncturation of varying size. Surface with elongate, erect hairs arising from the coarse punctures, highly glossy, lateral margin provided with elongate hairs.

Elytra (Figs 64, 408, 559). Rather elongate, slightly depressed on disk, in basal half parallel, in apical third faintly widened, then strongly narrowed to apex. rather narrow, transverse, though truncature convex, apical angles widely rounded off. Shoulders widely rounded off, basal margin slightly oblique. Behind shoulders and along the whole lateral margin with elongate hairs. Marginal channel very narrow, partly concealed. Basal border incomplete, reaching to outer third of base. Scutellar pore present. Series of umbilical pores consisting of 4, or sometimes 5 closely set pores behind shoulder, difficult to see within the coarse puncturation. Setae elongate. Striae including sutural stria absent. Microreticulation absent, puncturation double, consisting of very coarse punctures and far less coarse, moderately dense puncturation of varying size in the space between the coarse punctures, surface with elongate, erect hairs arising from the coarse punctures, highly glossy.



Figs 218a-l. *Adelotopus analis* Macleay. Details of head and genitalia. For legends see fig. 100.

Lower surface. Prosternal process moderately short, wide, slightly convex, apex wide, convex, markedly setose. Metepisternum moderately elongate, c. 1.7 × as long as wide, in posterior third barely hollowed. Abdominal sterna apparently with 2 elongate setae on either side, though difficult to see within the elongate pilosity. Lower surface densely punctate and with elongate, erect hairs.

Legs. Moderately elongate, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur moderately deep, anterior plate overlapping the groove for apical half, but border of anterior plate barely convex, posterior border of groove sharp. Femur moderately wide. Metatibia moderately elongate, >5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 218e-k). Genital ring moderately wide, rather convex, barely asymmetric, with slightly asymmetric, narrow, barely excised base. Sternum VII rather narrow, apically markedly convex, with fairly deep excision, basally rather deeply excised, lateral parts rather short. Aedeagus rather short, moderately depressed, in middle widened, barely asymmetric. Lower surface almost straight. Apex very wide, widely rounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Right paramere rather narrow and elongate, with obliquely acute apex, left paramere considerably larger than right, wide, with widely rounded apex.

♀ genitalia (Fig. 218l). Stylomere narrow, apex acute, slightly convex, with 2-3 elongate subapical setae. Lateral plate rather elongate, with 2-3 elongate apical setae.

Variation. Very little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen captured at light. So far collected in January, August, and November.

Distribution (Fig. 643). Occurs apparently in a very limited range between Maryborough and Gayndah in central southeastern Queensland.

Material examined (6). **Qld:** 1♂, Coongana Rock via Coalstoun Lakes 22.VIII.1976, H. Frauca (ANIC); 1♂, Ban Ban Range, via Coalstoun Lakes, I.1974, H. Frauca (ANIC); 1♂, Bin Bin Rg. Via Discot, 6.I.75, H. Frauca (CBM); 1♀, K 12229, *Adelotopus analis* M^{c} L. W. Gayndah Holotype (AMS); 1♀, 16.XI.86 Gayndah V. R. Bejsak, lgt., *Cainogenion* sp. det. B. P. Moore '81 (CBS); 1♀, Maryborough E. W. Fischer (SAMA).

Diagnosis. Medium-sized, rather narrow, highly convex, piceous-black species. Labrum quadrisetose; glossa c. 8-10-setose; lateral margin of pronotum narrow; basal border line of elytra abbreviated, reaching halfways to suture; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 6 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus highly asymmetric, with characteristic, triangular flange at apex; internal sac of aedeagus complicate, without an oblique fold near apex.

Larva. 1st instar larva of the single species known.

Distribution. A single species from southeastern and eastern Australia.

Systematic position. This group is the plesiomorphic adelphotaxon of the *fasciatus-maculipennis*-linage and is more plesiomorphic in the low number of glossal setae, and rather large number of marginal elytral setae. It is apomorphic in the odd-shaped apex of aedaegus.

Adelotopus paroensis Castelnau, 1867

Figs 65, 84-96, 219, 409, 560, 644

Adelotopus paroensis Castelnau, 1867, p. 31; 1868, p. 117; Gestro 1884, p. 303; Notman 1925, p. 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50.

Adelotopus micans Blackburn, 1901, p. 18; Notman 1925, p. 7, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 51 (**new synonymy**).

Adelotopus niger Notman, 1925, p. 7, 8, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52 (**new synonymy**).

Types. Of *paroensis*. Lectotype (by present designation): ♂, Paroo River Coll. Castelnau, *paroensis* Castn., Syntypus *Adelotopus paroensis* Castelnau, 1867, *gyrinoides* Hope *paroensis* Cast., = *A. gyrinoides* Hope det. R. Gestro, 1886 (MCSN). – Paralectotypes: 1♂, Paroo Riv. Coll. Castelnau, Paroo Riv., Syntypus *Adelotopus paroensis* Castelnau, 1867, = *A. gyrinoides* Hope det. R. Gestro, 1886 (MCSN); 1♀, Paroo Riv. Coll. Castelnau, Syntypus *Adelotopus paroensis* Castelnau, 1867, = *A. gyrinoides* Hope det. R. Gestro, 1886 (MCSN); 1♀, Darling R., Cotype, *Paroensis* Cast., *A. paroensis*, Howitt Colln 40 (NMV).

Of *micans*. Lectotype (by present designation): ♀, T 4991, Quor (sic!), Type Blackburn coll 1910-236, *Adelotopus micans* Blackb. (BMNH). – Paralectotypes: 1♂, 4991, Quor (sic!), *Adelotopus micans* Bl. co-type, *Adelotopus micans* Blackb. Cotype (SAMA); 1♀, Quorn S. A. Blackb's Coll. (SAMA).

Of *niger*. Holotype: ♀, Australia Koebele, U.S.N.M. Type Nr. 26168, Type *Adelotopus niger* Notman (USNM).

Type localities. Of *paroensis*: "Paroo and Darling Rivers", New South Wales. – Of *micans*: "Quorn", South Australia. – Of *niger*: "Australia".

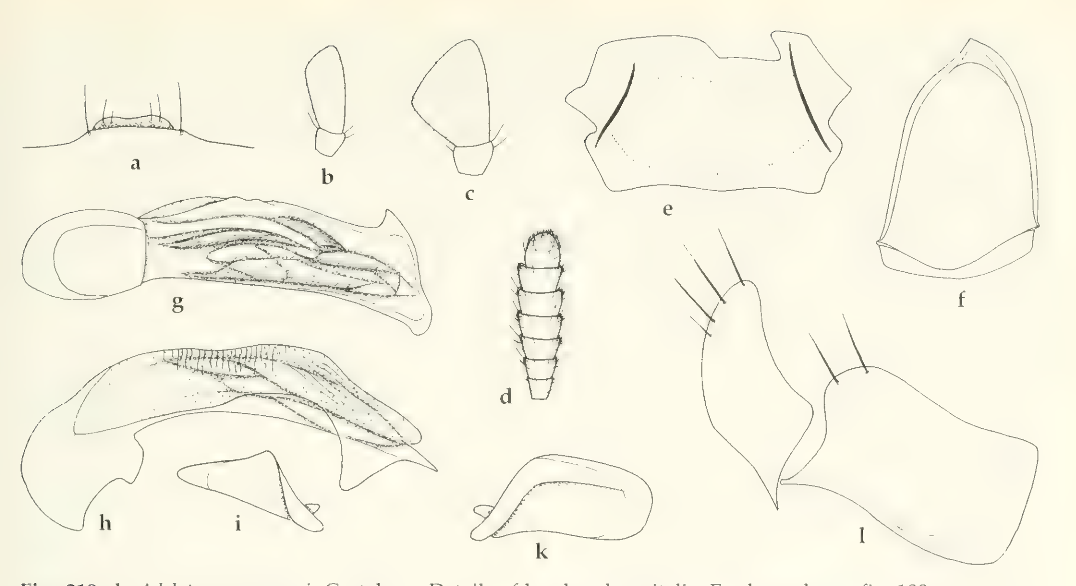
Note. The synonymy of the three names has been verified by examination of the types. However, Gestro (1884) already synonymized *paroensis* with *gyrinoides* Hope on the basis of the statement that he compared the type specimens of *paroensis* with a specimen of the Chaudoir Collection labelled "*gyrinoides* Hope". This synonymization, however, is wrong, because the type specimens of *paroensis* are as well different from the type of *gyrinoides* as the specimen from the Chaudoir collection (seen by me) is. *Gyrinoides* on the other hand is identical with *occidentalis* Castelnau. This example clearly demonstrates how confused the nomenclatorial situation within certain of the smaller species of *Adelotopus* is, because neither of the older authors had access to the types.

Diagnosis. Like group diagnosis.

Description

Measurements. Length: 4.1-6.0 mm. Ratios. Width/length of pronotum: 1.35-1.40; width base/apex of pronotum: 1.28-1.35; width pronotum/head: 1.38-1.44; length/width of elytra: 1.61-1.67; length elytra/pronotum: 2.22-2.30.

Colour (Figs 65, 409). Piceous to piceous-black, all margins of pronotum and lateral borders and sometimes also apex of elytra more or less distinctly reddish translucent. Lower surface of head and thorax piceous, abdomen reddish-piceous to piceous, posterior margins of sterna reddish. Mouth



Figs 219a-l. *Adelotopus paroensis* Castelnau. Details of head and genitalia. For legends see fig. 100.

parts, antennae, and legs dark reddish to reddish piceous, tibiae and tarsi barely darker.

Head (Figs 85-91, 219a-d). Rather, wide, rather depressed. Anterior border gently convex, basal margin perceptibly upturned, lateral angle shortly rounded, laterally markedly projecting, lateral borders markedly narrowed behind eyes. Clypeal suture indistinct, somewhat triangular, in middle widely interrupted, sometimes almost invisible. Labrum rather wide and short, strongly overlapped by the clypeus, apex feebly concave, usually quadrisetose, though sometimes tri- or fivesetose. Antennal groove laterally angulately bordered, latero-posteriorly with slightly angulate area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally oblique, apex angulate. Glossa fairly wide, tongue-like, apically gently convex, ventrally with distinct keel, at border with c. 8-10 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna short and wide, 8th-9th antennomeres almost 2.5 × as wide as long. Microreticulation absent, puncturation rather dense, moderately fine, rather irregular, size of punctures rather different. Surface with weak sulcus medially of eyes, shortly pilose, rather glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 409). Moderately wide, highly convex, distinctly wider than long, base distinctly wider than apex, widest near base. Apical angles feebly produced, at apex obtusely rounded, fairly oblique, just attaining posterior border of eyes. Apex fairly excised, rather convex in excision, unbordered. Sides almost straight, distinctly oblique. Margins moderately narrow, distinctly chanelled, rather coarsely bordered. Basal angles evenly rounded off. Base faintly convex, irregularly bordered. Surface near base with extremely shallow transverse impression. Microreticulation absent, puncturation rather dense, moderately fine, irregular, size of punctures rather different, surface with some fine wrinkles, shortly pilose, glossy.

Elytra (Figs 65, 84, 409, 560). Rather elongate and moderately narrow, convex, though slightly depressed on disk, parallel. Lateral borders almost straight. Apex wide, slightly oblique, truncature fairly convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel rather narrow throughout, partly concealed. Basal border abbreviated, reaching halfways to suture. Lateral border asetose. Series of umbilical pores consisting of 6, rarely unilaterally 7 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation rather dense, moderately fine to fairly coarse, size of punctures rather different, surface with some fine wrinkles, shortly pilose, glossy.

Lower surface (Fig. 95). Prosternal process rather elongate, moderately wide, depressed, apex narrow, compressed, passing over in a very wide angle from ventral surface, slghtly setose.

Metepisternum elongate, c. 1.8-2.0 × as long as wide, in posterior third not hollowed. Abdominal sterna with 1 elongate seta each side. Lower surface densely punctate and rather distinctly setose.

Legs (Figs 92-94). Moderately short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur deep, anterior plate overlapping the groove for apical half, posterior border of groove sharp. Femur rather wide. Metatibia moderately elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide.

♂ genitalia (Figs 219e-k). Genital ring moderately wide, rather triangular, fairly asymmetric, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically almost straight, with rather deep excision, base faintly bisinuate, basal angles obtusely rounded, lateral parts fairly short. Aedeagus fairly elongate, moderately depressed, in middle not widened, highly asymmetric. Upper surface in middle with strong transvere wrinkles, apex with longitudinal wrinkles. Basal part fairly short, moderately bent. Lower surface gently concave. Apex very wide, wing-shaped, with a large triangular flange to right side. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres rather large, right triagonal, with angulately rounded apex, left paramere considerably larger than right, square, with transverse apex, laterally with longitudinal edge.

♀ genitalia (Fig. 219l). Stylomere fairly narrow, tapering to apex, lateral border concave, apex rather narrow, obliquely convex, with 2-4 elongate apical setae. Lateral plate rather elongate, with 1-2 elongate apical setae.

Variation. There is considerable variation in size, relative width of pronotum und size and density of puncturation.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. This very common and widespread species has been collected by me mainly under bark of river gums and some other gum-type eucalypts; other specimens were caught "on *Eucalyptus*", "under gum bark", "under bark", "under *Eucalyptus camaldulensis* bark", on "*Euc. camaldulensis*", "Under bark *Eucalyptus blakelyi*", on "*Eucalyptus blakely*", "Under bark of *Eucalyptus melliodora*", in "pitfall under *Leucopogon*", "in woodland", and in "light trap". Captures are recorded from all months except June, but by far most captures have been made in December.

Distribution (Fig. 644). Eastern South Australia, Victoria, New South Wales, Queensland north to Atherton Tableland, ? Western Australia. The latter record refers to a series of specimens labelled "Australia occid." and is rather doubtful, because no other, well localized specimens of this common and widespread species from Western Australia are available. This species goes far inland in South Australia and the Riverina country of New South Wales.

Material examined (1325). **SA:** 6♂♂, 15♀♀, nr. Kimba, 23.XII.1972, B. K. Head (SAMA); 1♀, T 4991, Quor, Type Blackburn coll 1910-236, *Adelotopus micans* Blackb. (BMNH); 1♂, 4991, Quor, *Adelotopus micans* Bl. co-type, *Adelotopus micans* Blackb. Cotype (SAMA); 1♀, Quorn Blackb's Coll. (SAMA); 1♀, Quorn A. H. Elston, *Adelotopus micans* Blackb. 1586, A. H. Elston Coll. (AMS); 1♂, 1♀, Quorn A. H. Elston, *Adelotopus micans* Bl. Id. by A. M. Lea, A. H. Elston Coll. (AMS); 1♀, Adelaide (OUM); 2♀♀ (?), Balaklava, S. H. Curnow Coll. (SAMA); 1♂, 1♀, 2 ml. from Odiawirra (Adelaide), 23.XII.1973, G. F. Gross (SAMA); 11♂♂, 3♀♀, Yunta Ck. by Yunta, 23.XII.1973, G. F. Gross (SAMA); 2♂♂, 14♀♀, Yorketown CNHM 1955 Karl Brancsik Coll. Ex Eduard Knirsch, *hydrobioides* det. Ball (FIELD); 1♀, Yorketown CNHM 1955 Karl Brancsik Coll. Ex Eduard Knirsch, Pseudomorphini Genus ? sp. ? det. D. Shpeley 1987 (FIELD); 1♀, Parachilna Flinders Range, *Adelotopus haemorrhoidalis* Fab. (SAMA); 3♂♂, 1♀, Flinders Rg. nr Kanyaka Ruins, 29.V.1976, JHH Szent-Ivany (SAMA); 2♂♂, Mt. Seale, N. Flinders Ra, Hale & Tindale (SAMA); 1♂, 1♀, Orroroo, 28.VIII.1966, G. F. Gross (SAMA); 3♀♀, Orroroo (SAMA); 2♂♂, Mildura, W. Frey, *Adelotopus* probably *micans* Blackb., E. B. Britton det. 3.IV.1936 (BMNH); 1♂, 1♀, Robe. 1 km S, 14.-18.XII.1978, P. J. M. Greenslade (SAMA); 1♂, 24.I.63, Bordertown, T. Houston (SAMA); 2♀♀, Renmark I.1937. F. E. Wilson, F. E. Wilson Collection, *A. micans* (NMV); 2♂♂, 1♀, 1 (?) (MMS). – **Vic:** 1♂, On SA-Vic border between Bordertown & Kaniva, 25.XII.35, Ex coll. R. V. Southwood (SAMA); 1♂, 2♀♀, Redcliffs I.1937 F. E. Wilson, F. E. Wilson Collection, det. *micans* (NMV); 1♂, 1♀, Redcliffs, I.87 FGN, *micans* Blkb. 1593, J. G. Brooks Bequest 1976 (ANIC); 1♀, Kulkyne For. N. W. V., VII.30 G. W. A., J. G. Brooks Bequest 1976, *fasciatus* Cast. 1582 (ANIC); 1♀, Hattah, *Adelotopus inquilinus* Erichs. Id. by H. J. Carter (UQIC); 2♀♀, Lake Hattah XI.1924 C. Oke, *Adelotopus micans* Blackb. Id. by T. G. Sloane, *Adelotopus paroensis* Cast., *A. gyrinoides* (NMV); 2♀♀, Lake Hattah, J. E. Dixon, *A. micans* Bl. C. Oke (AMS); 1♂, 1♀, Hattah, C. Oke, XI.1924, *Adelotopus paroensis* Cast., det. *gyrinoides* (NMV); 1♀, Hattah III.1914 (NMV); 2 (fragments, sex ?), Lake Hattah J. E. Dixon, *Adelotopus micans* Bl., Wilson (BMNH); 2♂♂, Dimboola, C. French 1910-297m det. *micans* (BMNH); 1♀, Dimboola, C. French 1910-297, *Adelotopus micans* Blackb. (FMT); 1♀, 1♂, Mallee Ouyen Dist. Jarraby, 19.II.14 Run by Mr. C. ?, *Adelotopus tasmani*

? Bl. (MCZ); 1♀, Mallee Dist. etc. Pres. by C. Fetz, det. *tasmani* (MCZ); 1♂, 1♀, Mallee Dist Yarraby Pres. by Mr. C. Fetz (?) Ser. Ent. 19.II.14 (NMV); 1♂, 2♀♀, Alex. Brncsk., A. Fenyes Coll., det. *gyrinoides* (CAS); 1♂, Grampians 2.I.38 C. Oke (NMV); 2♂♂, 4♀♀, Inglewood 27.XII.48, C. Oke, *Adelotopus paroensis* Cast. Det. C. Oke, det. *gyrinoides* (NMV); 1♂, 1♀, Belgrave C. Oke, *Adelotopus micans* Blackb. Id. by T. G. Sloane, F. E. Wilson Collection (NMV); 1♂, 1♀, Morbethong (?) Healesville 30.II.30, C. E. C., C. E. Clarke Coll. (BMNH); 1♂, 1♀, Grinters Pit Rd., Kaarimba 6.III.1992 P. A. Meyer coll. (CBM); 1♀, Mallin (ANIC); 1♂, Coll. B. Schwarzer (SMF). – **NSW:** 5♀♀, Westl. Riverina, Wait leg. Lüddemann det. (DEIB); 3♀♀ (?), Deniliquin, 10.II.66, V. R. Squires (ANIC); 1♂, 18 mi N. of Deniliquin, V. R. Squires, 12.IV.66 (ANIC); 5♂♂, 13♀♀, Narrabri, 21.I.1960, M. Nikitin (BMNH); 2♂♂, 3♀♀, Narabri, 16.IV.1961, M. I. Nikitin, *S. aphodioides* Det. M. I. Nikitin 1962 (FMT); 10♂♂, 13♀♀, Tamworth, 17.I.1960, F. L. Edwards (BMNH); 1 (?), Tamworth, Lea (SAMA); 1♂, Wilson's D., 16.I.1975, J. Sedlacek Coll. (CSB); 1♂, 1♀, Trangie, 6.XII.1965, O. W. Richards (BMNH); 4♂♂, Ponto Falls via Wellington, 12.XII.1977, K. J. & C. L. Lambkin (QMB); 1♂, 2♀♀, Ponto Falls via Wellington, 12.XII.1977, F. J. Grant Taylor & D. R. Smith (QMB); 1♂, Wellington Froggatt 1891, W. W. Froggatt Collection (ANIC); 1♂, 4♀♀, Lake Benanee, 14.XII.72, B. P. Moore, *Adelotopus micans* Blbn,. det. B. P. Moore '87 (CMC); 1♂, 1♀, Pretty Pine, 29.III.59, B. P. Moore, det. *micans* (CMC); 1♀, 3 km SW of Currabubula (31.16S, 150.44E), 2.X.71, S. Misko (ANIC); 1♂, 2♀♀, Paroo River, *Adelotopus paroensis* Castelnau, lectotype!, paralectotypes! (MCSN); 1♀, Darling R., *A. paroensis* Castelnau, paralectotype! (NMV); 1♀, Darling River 2.X.44 C. Oke, *Adelotopus paroensis* Cast. compared with paratype, *Adelotopus* = *micans* Bl., *A. gyrinoides* (NMV); 3♀♀, Coll. Kraatz, det. *filiformis* (DEIB); 1♂, 4♀♀, Mullaley I.57, F. E. Wilson, F. E. Wilson Collection, det. *micans* (NMV); 1♀, Mullaley HJC. X.29 (ANIC); 2♀♀, Goolagong I.52, F. E. Wilson, F. E. Wison Collection, det. *micans* (NMV); 7♀♀, Morilla 11.II.11, After comparison with a cotype from Lea = *Adelotopus micans* Blackb. Id. by T. G. Sloane (ANIC); 16♀♀, 3 (sex ?), Morilla 11.II.11 (ANIC); 7♀♀, Morilla, 11.II.11, *Adelotopus micans* Blackb. Id. by T. G. Sloane, H. E. Andrewes Coll. (BMNH); 1♂, Caldwell, IX.31 G. Goudie, J. C. Goudie Collection (NMV); 1♂, 3♀♀, Wee Waa, 17.IV.1961, M. I. Nikitin, *S. aphodioides* Det. M. I. Nikitin 1962 (FMT); 2♀♀, Wee Waa, 17.IV.1961 (FMT); 1♂, 2♀♀, Wee Waa, 25.I.1960, M. I. Nikitin, *Adelotopus aphodioides* Det. M. I. Nikitin 1961 (FMT); 2♂♂, 2♀♀, Wee Waa, 18.IV.1961, M. I. Nikitin, *Adelotopus aphodioides* Det. M. I. Nikitin 1961 (FMT); 1♀, Coll. Kraatz, *Adelotopus filiformis* Cast., *A. filiformis* Lap. (DEIB); 1♂, *A. aphodioides* Westw. Whitton, Lea's, *Adelotopus aphodioides*, W. (SAMA); 1♂ (NMV); 1♀ (OUM). – **Qld:** 1♂, 1♀, Stanthorpe E. Sutton, E. Sutton Coll. (QMB); 1♀, Stanthorpe, E. Sutton (SAMA); 3♂♂, 5♀♀, O. W. Tiegs, Wypeema (QMB); 1♀, Mt. Tamborine, 27.XII.51, C. Oke (NMV); 2♂♂, 6♀♀, Brisbane, Mt. Glorious, 11.XII.1992, leg. Wachtel (CBM); 2♂♂, 4♀♀, Bris. (UQIC); 3♂♂, 8♀♀, 1 (?), Kilarney, T. G. S. 27.XII.10 (ANIC); 1♂, 1♀, Killarney T. G. S. 7.XII.10, Not *A. punctatus* of H. coll. 25.IV.21 (ANIC); 4♀♀, Dalby 31.XII.25 (UQIC); 3♂♂, 5♀♀, Boonah SQ XII.53 J.B., J. G. Brooks Bequest 1976 (ANIC); 1♂, 3♀♀, St. George 29.-30.XII.1973, G. F. Gross (SAMA); 1♂, 1♀, Hambledon 14.XII.49 A. Johnson E. Sutton, E. Sutton Coll. (QMB); 1♂, 1♀, Gatton 3.I.33 (UQIC); 2♀♀, Gatton 14.XII.34 (UQIC); 2♀♀, Qld 51, Parker Ck., 20 km s. Miriam Vale, 20.XI.1990, M. Baehr (CBM); 330♂♂, 368♀♀, Qld 50, Calliope R., 27 km se. Mt. Larcom, 20.XI.1990, M. Baehr (CBM, DPIM, MNTD, UASM, ZSM); 15♂♂, 23♀♀, Calliope 22 km W., 2.XI.1985, Richard Bejsak (MMS); 2♂♂, 4♀♀, 11.XI.1986, Calliope, V. R. Bejsak lgt. (CBS, MMS); 1♀, 15.XI.1986, Mt. Morgan, V. R. Bejsak lgt. (CBS); 1♀, 14.XI.1986, Kroombit Tops, V. R. Bejsak legt. (CBS); 2♀♀, Kroombit Tops 10.XI. 700 m, J. H. Sedlacek (CSB); 1♂, 2♀♀, 11.XI.1986 Mundubbera CUV, J. Sedlacek lgt. (CSB); 2♂♂, 6♀♀, Qld G-38, Raglan Ck., 10 km nw. Mt. Larcom, 21.XI.1990, leg. Gerstmeier (CBM); 61♂♂, 54♀♀, Qld 19, Burnett R., 10 km n. Eidsvold, 9.XI.1990, M. Baehr (CBM); 2♂♂, 1♀, XI.1986, Monto, J. Sedlacek lgt. (CSB); 29♂♂, 27♀♀, Qld 20, Cania Gorge, 25 km nw Monto, 9.-11.XI.1990, M. Baehr (CBM); 4♂♂, 2♀♀, Cania Gorge, 26 km NW of Monto, 24.XII.1982, J. & E. Doyen Coll. (ANIC); 2♀♀, Clermont Dr. Spence (ANIC); 2♀♀, Rockhampton, *Adelotopus* var of *dytiscoides* (SAMA); 1♂, 5♀♀, Rockhampton (SAMA); 4♂♂, 3♀♀, Mitchell, 3.I.1974, G. F. Gross (SAMA); 1♂, 1♂, 4♀♀, Mitchell 9.I.1974, G. F. Gross (SAMA); 1♀, Cairns N.Q. I.1951 C. Oke, *Adelotopus niger* Notm. (NMV); 1♀, Caborlah T. G. S. 29.XII.10 (ANIC); 1♂, 2♀♀, C. E. Clarke Coll., *A. filiformis* Cast. S. Qld 1947 (BMNH); 1♂, *Paroensis* Castl., Ex Museo Van Lansberge (MNHN); 1♀, Ex Museo H. W. Bates 1892 (MNHN); 1♂, 1♀, Janson Acq. 1884 (MNHN); 1♂, *Heteromorpha Kirbyi* (NMV); 1♂, *Adelotop*, R.I.Sc.N.B. I.G. Coll. Gen. (IRSNB). – **WA:** 3♂♂, 13♀♀, Australia occid. 1192 (HNMB). – **AUS:** 1♂, E. Australia, *Adelotopus aphodioides* Westw. Id. by T. G. Sloane (BMNH); 1♀, Fairfield, 22.-25.II.1959, F. C. Edwards (BMNH); 1♂, Austral. int. comp. av. type Stevens, Ex Musaeo Chaudoir, det. *gyrinoides* Hope (MNHN); 1♀, Australie, Ex Musaeo Chaudoir (MNHN); 1♀, Koebele, Type *Adelotopus niger* Notman (USNM); 2♂♂, 2♀♀, Koebele, Koebele Coll., *Adelotopus gyrinoides* Hope (CAS); 1♀, Westwood 6.II.2499, C. E. Clarke coll. (BMNH); 1♂, 1♀, 1 (?), F. Walker 1868 (OUM). – **?:** 1♂, Belmore (ANIC); 1♀, Fundort ?, Coll. B. Schwarzer, *ipsoides* Wstw. (SMF); 2♀♀, Fundort ?, Coll. B. Schwarzer (SMF); 1♀ (?), Ex Museo H. W. Bates 1892 (MNHN); 1♀, *Paroensis* Castel., Ex Musaeo Mniszech, det. *lioderma* Chaud. (MNHN); 1♂, Ex Musaeo Chaudoir (MNHN); 1♀, 56, Howitt Colln (NMV); 1♀, (label not readible), *armatus* Cast., 49, Howitt Colln, *A. armatus* (NMV); 1♂, Soc. Ent. Belg. Coll. PUTZEYS; R.I.Sc.N.B. I.G. Coll. Gen. (IRSNB); 1♀ (OUM); 1♀ (NMV).

Diagnosis. Small, rather narrow, fairly convex, black species with a large reddish sutural spot. Labrum quadrisetose; glossa c. 16-setose; lateral margin of pronotum narrow; basal border line of elytra abbreviated, reaching less than halfways to suture; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 4 subhumeral pores only; abdominal sterna with 2 ambulatory setae each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; internal sac of aedeagus complicate, without an oblique fold near apex.

Larva. 1st instar larva of the single species known.

Distribution. A single species from southeastern Australia.

Systematic position. This group is presumably the adelphotaxon of the *nemosomoides*- and *maculipennis*-groups. It is more plesiomorphic than both especially in the less narrow and elongate body shape.

Adelotopus fasciatus Castelnau, 1867
Figs 66, 220, 410, 561, 645

Adelotopus fasciatus Castelnau, 1867, p. 32; 1868, p. 118; Lea 1910, p. 122; Notman 1925, p. 8, 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50.

Types. Lectotype (by present designation): ♂, Sydney Coll. Castelnau, Sydney, *Fasciatus* Cast. Sydney, Holotypus *Adelotopus fasciatus* Castelnau, 1867 (MCSN).

Type locality: "Sydney", New South Wales.

Diagnosis. Small, elongate, rather convex, black species with wide saddle-shaped reddish spot on elytra, leaving black a well defined triangular scutellar spot and an less well delimited transverse fascia in apical third. Further distinguished from similarly coloured species by the incomplete basal border of elytra, lack of microreticulation, very fine and sparse puncturation, glossy surface, and short and rather wide aedeagus with widely rounded apex.

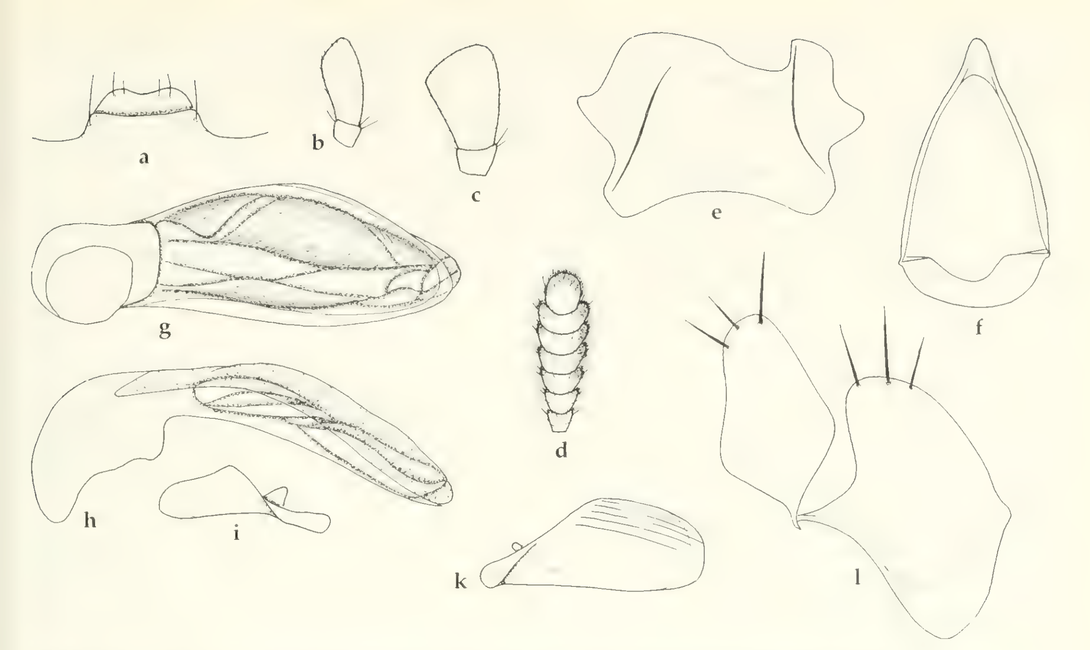
Description

Measurements. Length: 3.9-4.6 mm. Ratios. Width/length of pronotum: 1.46-1.49; width base/apex of pronotum: 1.41-1.43; width pronotum/head: 1.47-1.49; length/width of elytra: 1.64-1.66; length elytra/pronotum: 2.52-2.57.

Colour (Figs 66, 410). Black, margins of pronotum and elytra distinctly reddish, elytra with a large, saddle-shaped reddish spot the anterior border of which is well defined and markedly oblique. It leaves a triangular basal spot around the scutellum and a less well defined fascia in apical third black. Apex indistinctly reddish. Lower surface of head and thorax reddish-piceous, abdomen light reddish. Mouth parts, antennae, and legs reddish.

Head (Figs 220a-d). Rather short and wide, moderately depressed. Anterior border gently convex, lateral angle rounded, laterally barely projecting, lateral borders but faintly oblique. Clypeal suture indistinct, semicircular, in middle interrupted. Labrum rather large, moderately wide, apex slightly concave. Antennal groove laterally sharply bordered, latero-posteriorly with sharply carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex rectangular. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, not widened, not securiform. Terminal palpomere of labial palpus moderately wide, slightly securiform. Antenna very short, 8th-9th antennomeres >2.5 × as wide as long. Microreticulation barely visible, puncturation extremely fine, moderately sparse. Surface with a shallow sulcus medially of eyes, impilose, glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field impunctate and asetose. Gula asetose.

Pronotum (Fig. 410). Rather narrow, highly convex, base fairly narrow, moderately narrowed to apex. Apical angles not much produced, at apex obtuse, somewhat oblique, just surpassing posterior margin of eyes. Apex moderately excised, rather convex in excision, faintly and somewhat irregularly



Figs 220a-l. *Adelotopus fasciatus* Castelnau. Details of head and genitalia. For legends see fig. 100.

bordered. Sides evenly curved throughout, widest at base. Margins narrow, not explanate, faintly bordered. Basal angles rather widely rounded off. Base almost straight, faintly bordered. Surface near base without transverse impression. Microreticulation absent, puncturation rather fine, moderately sparse, surface impilose, highly glossy.

Elytra (Figs 66, 410, 561). Rather elongate, convex, though slightly depressed on disk, in basal half parallel, then narrowed to apex. Apex moderately wide, slightly oblique, truncature slightly convex, apical angles rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow, partly concealed. Basal border incomplete, reaching to less than middle between lateral border and suture. Lateral border asetose. Series of umbilical pores consisting of 4 closely set pores behind shoulder. Setae rather short. Striae including sutural stria absent. Microreticulation absent, puncturation extremely fine, sparse, surface impilose, highly glossy.

Lower surface. Prosternal process rather short, moderately wide, straight, apex moderately wide, oblique, forming an open angle with the lower surface, rather setose. Metepisternum elongate, >2 × as long as wide, in posterior third barely hollowed. Abdominal sterna with 2 elongate setae on either side. Lower surface rather sparsely punctate and pilose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, anterior plate widely overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia moderately elongate, slightly >4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide.

♂ genitalia (Figs 220e-k). Genital ring rather narrow, triangular, slightly convex, barely asymmetric, with slightly asymmetric, narrow, deeply excised base. Sternum VII rather narrow, apically convex, with fairly deep excision, basally rather deeply excised, lateral parts rather short. Aedeagus rather short, depressed, in middle markedly widened, barely asymmetric. Lower surface almost straight to gently convex. Apex wide, widely reounded off. Orifice moderate, internal sac fairly complex, without a distinct oblique fold near apex. Both parameres rather wide, with rather widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 220l). Stylomere wide, apex widely rounded, with 2-3 elongate subapical setae. Lateral plate moderately elongate, with 3-4 elongate apical setae.

Variation. Little variation noted in size and shape, slight variation noted in shape of aedeagus and parameres.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. One specimen collected on "flowering shrub". Dated specimens captured in January only.

Distribution (Fig. 645). Eastern Victoria, southern New South Wales, and Australian Capital Territory.

Material examined (8). **Vic:** 1♂, Fern Tree Gully C. Oke, *Adelotopus fasciatus* Cast. (NMV); 1♀, Belgrave 4.I.21 C. Oke, *Adelotopus fasciatus* Cast. (NMV); 1♀, Killara I.1919 C. Oke, det. *A. fasciatus* (CBM); 1 (defect, sex ?), Beaconsfield F. E. Wilson, TGS 158, 2339, *Adelotopus* sp. Id. by T. G. Sloane (ANIC); 1♀, Gippsland, det. *A. zonatus* (NMV). – **ACT:** 1♂, Blundell's 21.I.1931 (ANIC). – **NSW:** 1♂, Sydney Coll. Castelnau, Sydney, *Fasciatus* Cast. Sydney, lectotype! (MCSN). – **?:** 1♀, *Fasciatus* Cast, 45 Howitt Colln, det. *A. fasciatus* (NMV).

nemosomoides-group

Diagnosis. Rather small, very narrow and elongate, cylindrical, black species with reddish apex of elytra. Labrum quadrisetose; glossa c. 12-16-setose; lateral margin of pronotum very narrow, basal angle rounded off; basal border line of elytra abbreviated, attaining only outher ⅓ of base; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 4-5 subhumeral pores only; abdominal sterna with 2-3 ambulatory setae each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus variously shaped, always elongate, with or without a flange at apex; internal sac of aedeagus fairly complicate, with an oblique fold near apex.

Larvae. Unknown.

Distribution. 3 species in southeastern Australia, from eastern South Australia to southern New South Wales.

Systematic position. This group is the adelphotaxon of the *maculipennis*-group and belongs to the most highly evolved species-groups at all. It is perhaps more plesiomorphic than the *nemosomoides*-group in the absence of a distinct pattern, the rounded basal angles of the pronotum, the larger number of abdominal ambulatory setae, and the less complicate structure of the internal sac of the aedeagus. It is more more apomorphic in the more elongate and cylindrical body shape and the larger number of glossal setae.

Adelotopus nemosomoides Westwood, 1853
Figs 221, 411, 562, 646

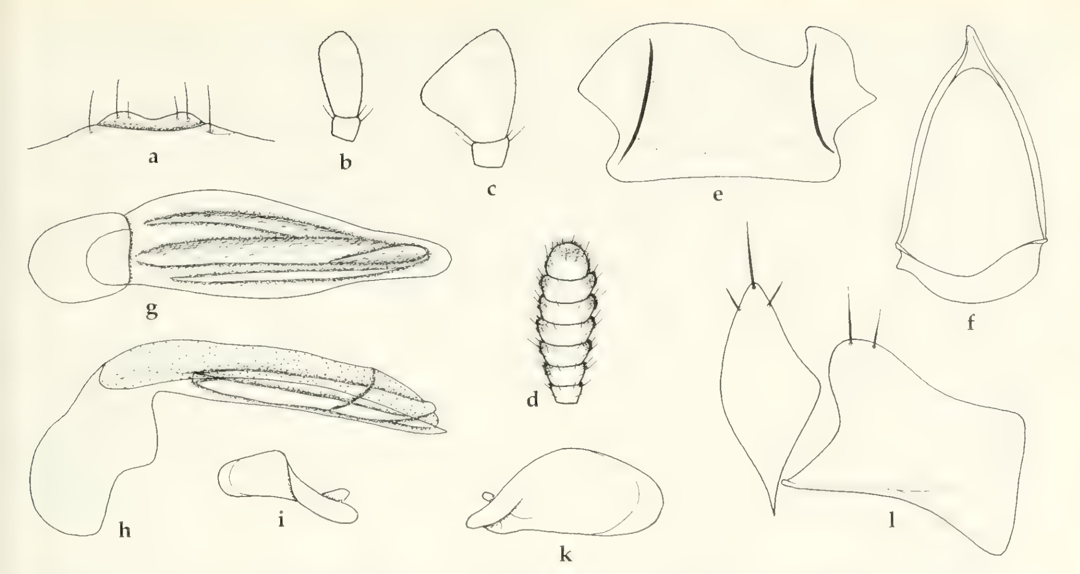
Adelotopus nemosomoides Westwood, 1853, p. 408, pl. 14, fig. 4; Blackburn 1901a, p. 18, 19; Notman 1925, p. 7, 10, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.
Adelotopus filiformis Castelnau, 1867, p. 33; 1868, p. 119; Blackburn 1901a, p. 18; Notman 1925, p. 7, 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50 (**new synonymy**).

Types. Of *nemosomoides*. Lectotype (by present designation): ♂, Type, Westwood, Revue et Mag. Zool. 1853, P. 408 T. 14 fg. 4, Coll. Hope Oxford, *Adelotopus nemosomoides* Westw. Type Col: 23 *Adelotopus nemosomoides* Westw. Hope Dept. Oxford (OUM).

Of *filiformis*. Lectotype (by present designation): ♀, Adelaide Coll. Castelnau, Adelaide *filiformis* Casteln, Holotypus *Adelotopus filiformis* Castelnau, 1867, *filiformis* Cast. *nemosomoides* Westw. ? (MCSN).

Type localities. Of *nemosomoides*. From description: "Adelaide", South Australia. – Of *filiformis*. "Adelaide", South Australia.

Diagnosis. Medium-sized, narrow, cylindrical, black species with apical fourth or fifth of elytra red. Distinguished from related species by rounded apical angles of pronotum, absence of microreticulation on the elytra, dense and rather fine puncturation of pronotum and elytra, elongate, in front of apex slightly constricted aedeagus with rather narrow, rounded apex, and acute, obliquely rounded stylomere with 1 elongate and 1-3 distinctly shorter setae. Best distinguished from most similar *A. longiformis*, spec. nov. by shape of aedeagus and much coarser puncturation.



Figs 221a-l. *Adelotopus nemosomoides* Westwood. Details of head and genitalia. For legends see fig. 100.

Description

Measurements. Length: 4.5-5.3 mm. Ratios. Width/length of pronotum: 1.25-1.28; width base/apex of pronotum: 1.24-1.28; width pronotum/head: 1.28-1.32; length/width of elytra: 1.87-1.91; length elytra/pronotum: 2.53-2.62.

Colour (Fig. 411). Black, lateral margins of pronotum and elytra faintly reddish translucent. Apical quarter or fifth of elytra reddish, this spot more or less prolonged along lateral margins and sometimes also along suture. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish-piceous or piceous, tibiae and tarsi barely darker.

Head (Figs 221a-d). Moderately short, rather narrow, moderately depressed. Anterior border rather convex, lateral angle rounded, laterally slightly projecting, lateral borders concave behind eyes. Clypeal suture distinct, semicircular, inmiddle more or less interrupted. Labrum rather wide and short, strongly overlapped by the clypeus, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, slightly narrowed to apex, not securiform. Terminal palpomere of labial palpus wide, rather securiform. Antenna very short, 8th-9th antennomeres >2 × as wide as long. Microreticulation dense and distinct, puncturation very fine, fairly dense. Surface almost devoid of sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of extremely short and inconspicuous setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 411). Narrow, highly convex, not much wider than long, base only slightly wider than apex. Apical angles not much produced, at apex rounded, rather oblique, just surpassing posterior border of eyes. Apex moderately excised, slightly convex in excision, distinctly bordered. Sides almost straight, faintly oblique, widest near base. Margins narrow, slightly chanelled, distinctly bordered. Basal angles moderately widely rounded off. Base almost straight, bordered. Surface near base with extremely faint traces of transverse impression only. Microreticulation fine, rather superficial, puncturation moderately fine, very dense, surface impilose, moderately dull.

Elytra (Figs 411, 562). Narrow and elongate, cylindrical, almost parallel. Apex wide, transverse, truncature rather convex, in middle even slightly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow throughout, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral

border asetose. Series of umbilical pores consisting of 4 or 5 closely set pores behind shoulder. Setae fairly short. Striae including sutural stria absent, Microreticulation absent, puncturation dense, moderately fine, surface impilose, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, rather tectiform, apex fairly wide, gently convex, passing over in an almost right angle from ventral surface, not setose. Metepisternum very elongate, c. 2.5 × as long as wide, in posterior third not hollowed. Abdominal sterna with 2-3 elongate seta each side. Lower surface rather apparently impunctate and impilose.

Legs. Moderately elongate, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia rather elongate, >5 × as long as wide, 1st tarsomere of metatarsus c. 1.8 × as long as wide.

♂ genitalia (Figs 221e-k). Genital ring moderately wide, rather triangular, slightly asymmetric, with slightly asymmetric, rather large, barely excised base. Sternum VII rather wide, apically evenly convex, with deep excision, basally barely excised, basal angles widely rounded, lateral parts fairly elongate. Aedeagus elongate, depressed, behind middle slightly widened, in front of apex narrowed, almost symmetric. Basal part elongate and rather bent. Lower surface straight. Apex moderately wide, rounded off. Orifice very elongate, internal sac moderately complex, with a distinct oblique fold near apex. Both parameres rather short and wide, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 221l). Stylomere rather elongate, apex rather acute, obliquely rounded, lateral border faintly concave, with 1 elongate seta at apex and 1-3 shorter subapical setae. Lateral plate elongate, with 1 elongate apical seta and 1-2 additional shorter setae.

Variation. Very litle variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Dated specimens captured in February, July, August, and December. One specimen captured in about 1.000 m altitude.

Distribution (Fig. 646). Southeastern Australia from eastern half of South Australia through Victoria, Australian Capital Territory, to southern part of New South Wales.

Material examined (10). **SA:** 1♂, Type, Westwood, *Adelotopus nemosomoides* Westw. Type Col: 23 Hope Dept Oxford (OUM); 1♀, Adelaide *filiformis* Casteln, Holotypus *Adelotopus filiformis* Castelnau, 1867 (MCSN). – **Vic:** 1♀, Fernshaw, D. Best., *Adelotopus nemosomoides* Westw. (NMV); 1♂, 2587 Victoria, *nemosomoides* Westw (AMNH). – **ACT:** 1♂, Canberra V. VIII.57, Darlingtons, det. *nemosomoides* (MCZ); 2♀♀, Black Mtn. 24.XII.1967, 2.VII.67, K. Pullen, Kim Pullen Collection (ANIC, CBM); 1♂, Belcannen, 17.XII.1969, K. R. Pullen, Kim Pullen Collection (ANIC). – **NSW:** 1♂, The Creel. Mt. Kosc. 3000 ft., 4.XII.31, Australian Harvard Exp. Darlington, *Adelotopus nemosomoides* Westw. (MCZ); 1♀, Narara, 29.II.1946 C. Oke, *Adelotopus nemosomoides* Westw. (NMV).

Adelotopus longiformis, spec. nov.

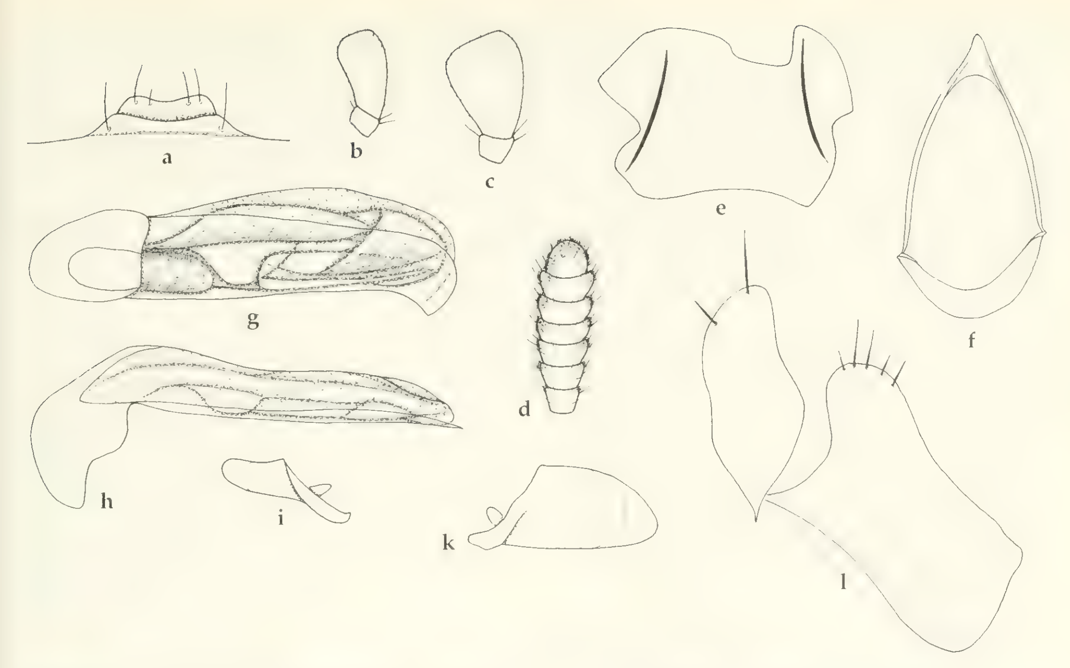
Figs 67, 222, 412, 563, 646

Types. Holotype: ♂, 4064 Bl.M., Blue Mts. Blackburn, *nemosomoides* Westw., *Adelotopus nemosomoides* W. N.S. Wales (SAMA). – Paratypes: 1♀, Ferntree Gully, 14.8.21 C. Oke. Vic., *Adelotopus nemosomoides* Westw. (NMV); 1♂, N.S. Wales, Canterbury (MMS).

Diagnosis. Medium-sized, narrow, cylindrical, black species with semilunar, red apex of elytra the red part occupying the apical third. Distinguished from related species by short, obtuse apical angles of pronotum, reduced microreticulation on the elytra, fairly dense, though extremely fine puncturation of pronotum and elytra, elongate, at apex hook-like turned aedeagus, and obliquely rounded stylomere with 1 elongate and 1 shorter apical seta. Best distinguished from most similar *A. nemosomoides* Westwood by shape of aedeagus and much finer puncturation.

Description

Measurements. Length: 4.8-5.5 mm. Ratios. Width/length of pronotum: 1.05-1.10; width base/apex of pronotum: 1.15-1.18; width pronotum/head: 1.21-1.25; length/width of elytra: 1.92-1.96; length elytra/pronotum: 2.32-2.41.



Figs 222a-l. *Adelotopus longiformis*, spec. nov. Details of head and genitalia. For legends see fig. 100.

Colour (Figs 67, 412). Black, apical angles and basal border of pronotum, sometimes also suture of elytravery faintly reddish translucent. Apical third of elytra reddish, this spot semilunar and more or less prolonged along lateral margins and sometimes also along suture. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 222a-d). Moderately short, rather narrow, depressed. Anterior border almost regularly semicircular, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, strongly overlapped by the clypeus, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with faint carinate area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 16 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus elongate, slightly narrowed to apex, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short, 8th-9th antennomeres c. 2 × as wide as long. Microreticulation dense and fine, puncturation extremely fine, difficult to detect, fairly dense. Surface with very weak sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of very short and inconspicuous setae. Suborbital field impunctate. Gula impilose.

Pronotum (Fig. 412). Narrow, extremely convex, not much wider than long, base only slightly wider than apex. Apical angles feebly produced, at apex obtuse, rather oblique, not even attaining posterior border of eyes. Apex feebly excised, slightly convex in excision, distinctly bordered. Sides almost straight, almost parallel, widest near base. Margins very narrow, faintly chanelled, finely bordered. Basal angles moderately widely rounded off. Base faintly convex, irregularly bordered. Surface near base without transverse impression. Microreticulation very fine, somewhat superficial, puncturation extremely fine, difficult to detect, rather dense, surface impilose, moderately dull.

Elytra (Figs 67, 412, 563). Narrow and elongate, cylindrical, almost parallel. Apex wide, transverse, truncature rather convex, in middle even slightly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel extremely narrow throughout, almost completely concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 4 or 5 closely set pores

behind shoulder. Setae fairly short. Striae including sutural stria absent. Microreticulation very superficial, only traces visible, puncturation rather dense, but extremely fine, difficult to detect, surface with some very fine, irregular wrinkles, impilose, moderately glossy.

Lower surface. Prosternal process rather elongate, moderately wide, rather tectiform, apex fairly wide, gently convex, passing over in an almost right angle from ventral surface, not setose. Metepisternum very elongate, c. 2.5 × as long as wide, in posterior third not hollowed. Abdominal sterna with 2-3 elongate setae each side. Lower surface rather apparently impunctate and impilose.

Legs. Moderately elongate, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.7 × as long as wide.

♂ genitalia (Figs 222e-k). Genital ring moderately wide, rather convex, symmetric, with slightly asymmetric, rather large, basally very convex,, deeply excised base. Sternum VII moderately wide, apically evenly convex, with very deep excision, basally slightly excised, basal angles obtuse, lateral parts fairly short. Aedeagus bery elongate, depressed, in middle not much widened, highly asymmetric. Basal part fairly elongate and rather bent. Lower surface almost straight. Apex wide, very depressed, hook-like turned left. Orifice very elongate, internal sac moderately complex, with a distinct oblique fold near apex. Both parameres rather short and wide, with rather widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 222l). Stylomere rather elongate, obliquely rounded, lateral border concave, with 1 elongate seta at apex and 1 shorter subapical seta. Lateral plate elongate, with 4-5 elongate apical setae.

Variation. Due to limited material little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. The single dated specimen captured in August. This species has been apparently not recollected since over 70 years.

Distribution (Fig. 646). Eastern Victoria, southern half of New South Wales.

Material examined (3). Only the type series.

Etymology. The name refers to the very elongate body shape.

Adelotopus conicollis, spec. nov.

Figs 223, 413, 564

Types. Holotype: ♀, ? *Adelotopus haemorrhoidalis* Erichs. Archiv. p. 126, *tasmaniae* Blackb. (BMNH).

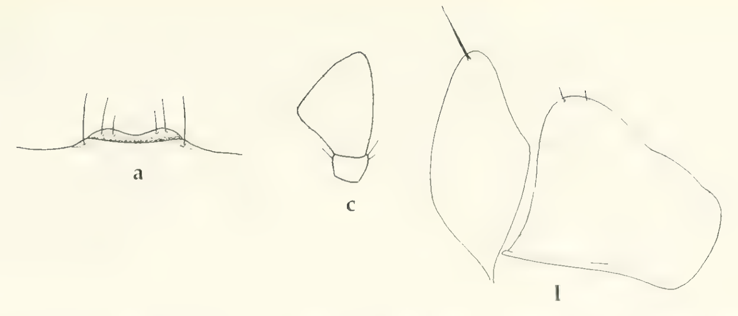
Diagnosis. Medium-sized, narrow, cylindrical, black species with wide, red apex of elytra that occupies the apical ⅖ and is anteriorly oblique. Distinguished from related species by short, obtuse apical angles of pronotum, reduced microreticulation on the elytra, fairly dense, moderately fine puncturation of pronotum and elytra, distinctly conical pronotum, and at apex acute, obliquely rounded stylomere with 1 elongate apical seta.

Description

Measurements. Length: 5.4 mm. Ratios. Width/length of pronotum: 1.23; width base/apex of pronotum: 1.27; width pronotum/head: 1.34; length/width of elytra: c. 1.95; length elytra/pronotum: 2.56.

Colour (Fig. 413). Blackish, apical ⅖ of elytra reddish, border of reddish spot oblique, also suture faintly reddish translucent. Lower surface of head and thorax blackish, abdomen reddish. Mouth parts, antennae, and legs reddish, tibiae and tarsi barely darker.

Head (Figs 223a,c). Moderately short, rather narrow, depressed. Anterior border almost regularly semicircular, lateral angle rounded, laterally projecting, lateral borders concave behind eyes. Clypeal suture indistinct, almost invisible. Labrum rather wide and short, strongly overlapped by the clypeus, apex slightly concave, quadrisetose. Antennal groove laterally sharply bordered, latero-posteriorly with convex area. Mental tooth triangular, short, apex acute. Wings of mentum wide, laterally



Figs 223a, c, l. *Adelotopus conicollis,* spec. nov. Details of head and ♀ genitalia. For legends see fig. 100.

rounded, apex angulate. Glossa wide, tongue-like, apically convex, ventrally with indistinct keel, at border with c. 12 elongate setae and additional pilosity on upper and lower surface and along border. Terminal palpomere of maxillary palpus broken. Terminal palpomere of labial palpus wide, markedly securiform. Antenna broken. Microreticulation extremely fine, slightly superficial, puncturation fine, very dense. Surface with weak sulcus medially of eyes, impilose, moderately dull. Ventrolaterally of eyes with a row of very short and inconspicuous setae. Suborbital field apparently faintly punctate. Gula impilose.

Pronotum (Fig. 413). Narrow, highly convex, not much wider than long, base slightly wider than apex. Apical angles feebly produced, at apex obtuse, rather oblique, just attaining posterior border of eyes. Apex feebly excised, slightly convex in excision, distinctly bordered. Sides distinctly oblique, slightly convex, widest near base. Margins very narrow, faintly chanelled, in middle even narrowed, finely bordered. Basal angles moderately widely rounded off. Base faintly convex, ditrinctly bordered. Surface near base without transverse impression. Microreticulation very fine, rather superficial, puncturation rather fine, dense, surface impilose, moderately glossy.

Elytra (Figs 413, 564). Narrow and elongate, cylindrical, almost parallel. Apex wide, transverse, truncature rather convex, in middle even slightly drawn in, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel narrow throughout, mostly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 5 closely set pores behind shoulder. Setae fairly short. Striae including sutural stria absent. Microreticulation absent, puncturation rather fine, fairly dense, surface impilose, glossy.

Lower surface. Prosternal process rather elongate, moderately wide, slightly convex, apex wide, gently convex, passing over in an almost right angle from ventral surface, asetose. Metepisternum very elongate, c. 2.4 × as long as wide, in posterior third not hollowed. Abdominal sterna with 2 elongate setae each side. Lower surface rather apparently impunctate and impilose.

Legs. Moderately elongate, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate deeply overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia fairly elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus c. 1.6 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 223l). Stylomere rather elongate, apex obtuewly triangular, obliquely rounded, lateral border straight, with 1 elongate seta at apex. Lateral plate short, with 2 short apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown.

Distribution. Unknown.

Material examined (1). Only the holotype.

Etymology. The name refers to the distinctly conical pronotum.

Diagnosis. Rather small, very narrow and elongate, slightly depressed, black species with reddish sutural elytral spot. Labrum quadrisetose; glossa c. 6-setose; lateral margin of pronotum very narrow, basal angle rectangular; basal border line of elytra abbreviated, attaining only outer ⅓ of base; scutellar pore absent; lateral margin of elytra without elongate setae; series of umbilical pores with 4 subhumeral pores only; abdominal sterna with 1 ambulatory seta each side; sternum VI without a fringe of longer setae at apical margin; tibiae, especially metatibia rather depressed; all femora wide and depressed; aedeagus rather wide and short, symmmetric, apex rounded; internal sac of aedeagus complicate, without oblique fold at apex.

Larvae. 1st instar larva known of one species.

Distribution. 2 species in northwestern Victoria, southwestern and northern most New South Wales, eastern Queensland, and southern half of Western Australia.

Systematic position. This group is the adelphotaxon of the *nemosomoides*-group and combines several highly apomorphic character states. It is perhaps more plesiomorphic than the *nemosomoides*-group in the less elongate and cylindrical body shape and the lesser number of glossal setae. It is more apomorphic in the presence of a distinct pattern, the rectangular basal angles of the pronotum, the lesser number of abdominal ambulatory setae, and the more complicate structure of the internal sac of the aedeagus.

Adelotopus maculipennis Macleay, 1871

Figs 68, 224, 414, 565, 646

Adelotopus maculipennis Macleay, 1871, p. 95; Notman 1925, p. 8, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 51.

Types. Lectotype (by present designation): 1♀ (?), Gayndah, Syntype, *Adelotopus maculipennis* Macl. Gayndah (ANIC-MMS).

Type locality: "Gayndah", Queensland.

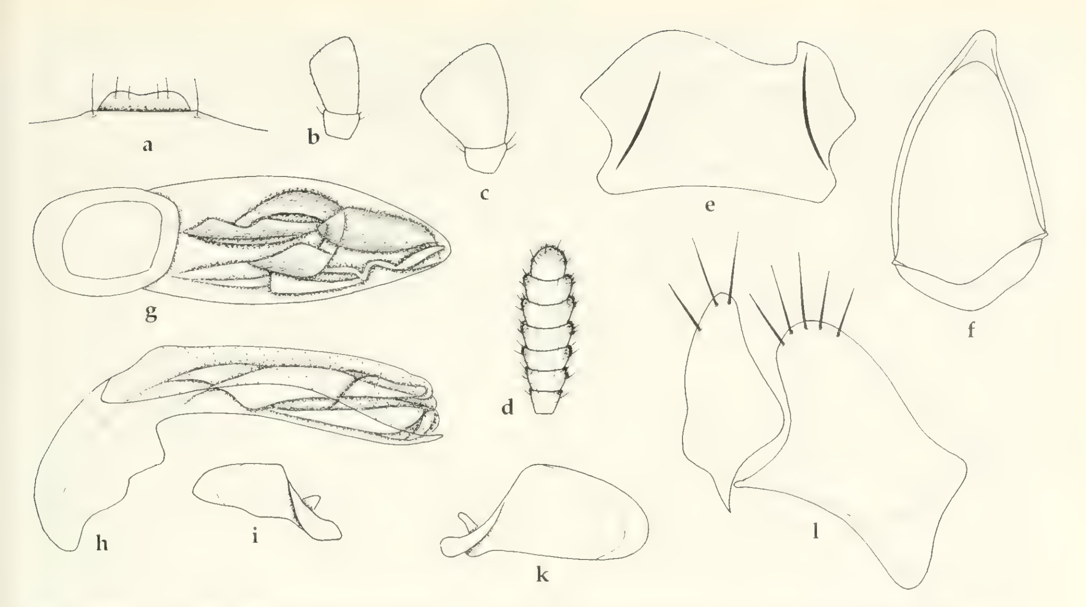
Diagnosis. Small, black species with red pronotum and rather small, trapezoidal elytral spot. Apart from colour and pattern distinguished from *A. cuneatus*, spec. nov. by narrower pronotum with narrower base, longer elytra, and finer puncturation of elytra.

Description

Measurements. Length: 3.5-4.3 mm. Ratios. Width/length of pronotum: 1.36-1.45; width base/apex of pronotum: 1.31-1.35; width pronotum/head: 1.39-1.45; length/width of elytra: 1.60-1.63; length elytra/pronotum: 2.35-2.55.

Colour (Figs 68, 414). Piceous-black to black, pronotum, lateral borders and apex of elytra reddish translucent. Elytra with a rather small, slightly trapezoidal reddish sutural spot in middle. Usually apex of pronotum more or less widely black. Lower surface of head and thorax dark piceous, abdomen reddish-piceous. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi barely darker.

Head (Figs 224a-d). Rather short, moderately wide, rather depressed. Anterior border faintly convex, lateral angle rounded, laterally not projecting, lateral borders straight behind eyes. Clypeal suture rather indistinct, somewhat triangular, sometimes almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave, quadrisetose. Antennal groove laterally convexly bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally oblique, apex widely rounded. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 6 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres almost 2.5 × as wide as long. Microreticulation absent, puncturation extremely fine and sparse, almost invisible. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.



Figs 224a-l. *Adelotopus maculipennis* Macleay. Details of head and genitalia. For legends see fig. 100.

Pronotum (Fig. 414). Moderately narrow, highly convex, distinctly wider than long, base distinctly wider than apex, widest at base. Apical angles feebly produced, at apex obtusely rounded, fairly oblique, just surpassing posterior border of eyes. Apex fairly excised, slightly convex in excision, unbordered. Sides more or less distinctly convex, slightly oblique. Margins very narrow, barely chanelled, coarsely bordered. Basal angles rectangular, shortly rounded off. Base faintly convex, moderately coarsely, though superficially bordered. Surface near base without transverse impression. Microreticulation absent, puncturation very fine, sparse, sometimes very difficult to detect, surface impilose, highly glossy.

Elytra (Figs 68, 414, 565). Moderately narrow and elongate, convex, though slightly depressed on disk, rather parallel. Lateral borders faintly convex. Apex wide, slightly oblique, truncature faintly convex, iapical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel in basal half moderate, then suddenly disappearing, partly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 4, rarely unilaterally 3 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation fine, rather sparse, surface asetose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, sharp, apex narow, compressed, passing over in an almost right angle from ventral surface, barely setose. Anterior border of prosternum with dense fringe of very elongate setae. Metepisternum very elongate, c. 2.2 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface extremely sparsely punctate and very shortly setose.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia short, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide.

♂ genitalia (Figs 224e-k). Genital ring rather wide, rather triangular, slightly asymmetric, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with rather deep excision, base faintly excised, basal angles rounded, lateral parts fairly short. Aedeagus rather short, moderately depressed, in middle widened, strongly narrowed to apex, symmetric. Basal part fairly long, moderately bent. Lower surface strongly convex, especially towards apex. Apex narrow, shortly rounded. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres rather large, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 224l). Stylomere rather narrow, tapering to apex, apex obliquely convex, with 3-4 elongate apical setae. Lateral plate rather short, with 3-5 elongate apical setae.

Variation. There is some variation in relative size of pronotum, size of the elytral spot, and distinctness of puncturation.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of river gums and certain other gum-type eucalypts. Dated specimens captured in March, October, and November, though by far most specimens in November.

Distribution (Fig. 646). Eastern Queensland north to Atherton Tableland, ? New South Wales. The latter record refers to a single specimen labelled purely "N S Wales". This species may occur in northern New South Wales, because it has been found near Ipswich not far from the Queensland/New South Wales border.

Material examined (25). **NSW:** 1♀, *Adelotopus maculipennis* Macl., C. French's Coll. (NMV). – **Qld:** 1♀, Qld 60, Mt. Walker Ck., 14 km s. Ipswich, 22.XI.1990, M. Baehr (CBM); 1♀ (?), Gayndah, Syntype, *Adelotopus maculipennis* Mcl. (ANIC-MMS); 1♂, 1♀, K 12233, *Adelotopus maculipennis* Gayndah N. S. W. (AMS); 1♀, Qld 14, Boonaro Ck., 35 km nnw. Goomeri, 8.XI.1990, M. Baehr (CBM); 1♀, 11.XI.1986, Calliope V. R. Bejsak, lgt. (CBS); 1♂, Qld 21, 2 km se. Cania Gorge, 25 km n. Monto, 11.XI.1990, M. Baehr (CBM); 3♂♂, 3♀♀, Qld 20, Cania Gorge, 25 km nw. Monto, 9.-11.XI.1990, M. Baehr (CBM); 1♂, Rockhampton 19, J. Sedlacek Collector (CSB); 2♂♂, 3♀♀, Qld 29, 215 km n. Dingo, Fitzroy Dev. Road, 12.XI.1990, M. Baehr (CBM); 1♂, Kuranda 21.III.52 C. Oke, *Adelotopus maculipennis* Macl. (NMV); 1♂, 43586, Masters, Fry Coll. 1905, *maculipennis* M^c L. W. (BMNH); 1♂, 91 *Adelotopus maculipennis* Macleay (OUM); 1♂, Janson Acq. 1884 (MNHN). – **Aus:** 1♂ (NHRS).

Adelotopus cuneatus, spec. nov.

Figs 225, 415, 566, 646

Types. Holotype: ♂, Australien, WA, 68 km nw. Wittenoom, Hooley Creek, 2.12.1984, M. & B. Baehr (WAM). – Paratypes: 12♂♂, 17♀♀, same data (CBM, MCZ, ZSM); 1♀, Lake Hatta (sic!) Victoria J. E. Dixon, E. Sutton Coll. 1964, *Adelotopus inquilinus* Erich. (QMB); 1♂, 1♀, Mallee District, Victoria, F. E. Wilson Collection (NMV); 1♂, Kiata, V. 8.II.49 B. Given, F. E. Wilson Collection (NMV); 1♂, Killara. Vic. C. Oke (NMV); 1♂, 1♀, Golgol (?), N.S.W. 4.1.41 F. E. Wilson, F. E. Wilson Collection (NMV); 1♂, Wentworth Murray Rv. 25.XII.30, C. E. Clarke Collection B. M. 1957-24., *A. scolytides* Newm., *scolytides* (BMNH); 1♀, N. Holl: Albany ? (OUM); 2♀♀, Australien, WA, Robe River, 42 km sw. Fortescue Cr., 6.12.1984, M. & B. Baehr (CBM); 1♂, 1♀, Australien, WA, 137 km sw. Roeburne, Fortescue River, 5.12.1984, M. & B. Baehr (CBM); 2♀♀, Fortescue R. Hamersley Range N. W. A.: W. D. Dodd, *Adelotopus* N. W. Australia I. 7676 (SAMA); 2♀♀, Aust. I. 1293, Fortescue River Hamersley Range, N. W. A.: W. D. Dodd (SAMA); 1♂, 1♀, Australien, WA 21, Dales Gorge, Hamersley Rge, 4.-5.12.1987, M. Baehr (CBM); 1♂, 1♀, Australien, WA 20, Wittenoom Gorge, Hamersley Range, 4.11.1987, M. Baehr (CBM); 2♂♂, Wittenoom Western Australia 4. Aug. 1987 R. P. Mcmillan (WAM 94/868-869).

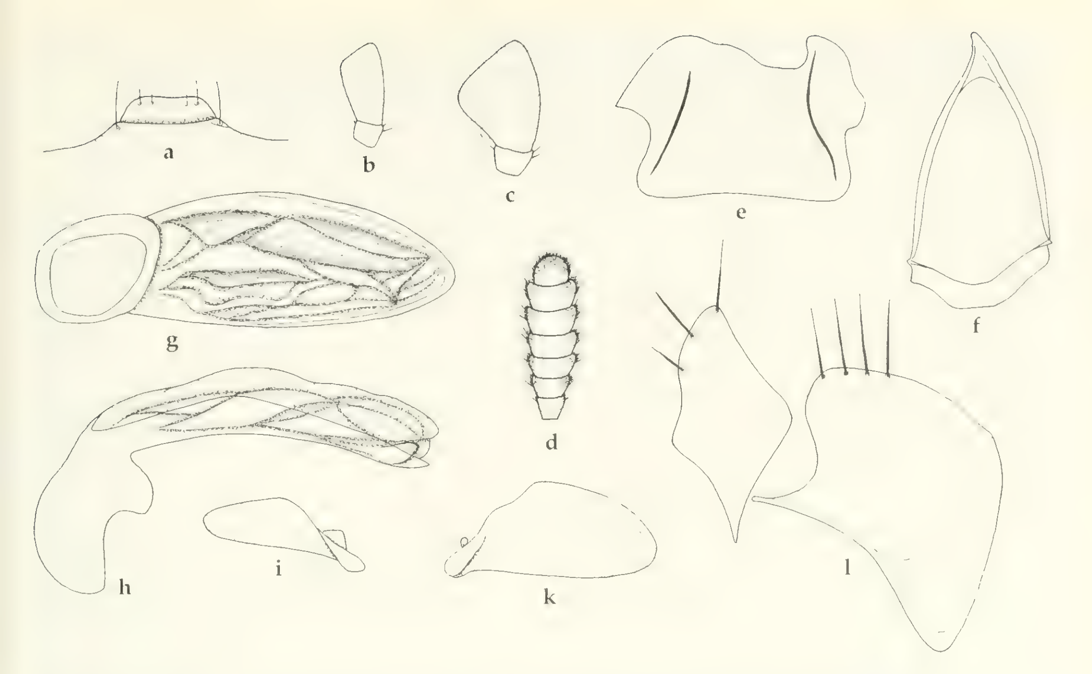
Diagnosis. Small, black species with blackish pronotum and large, elongate, wedge-shaped reddish elytral spot that occupies most of elytra. Apart from colour and pattern distinguished from *A. maculipennis* Macleay by wider pronotum with wider base, shorter elytra, and coarser puncturation of elytra.

Description

Measurements. Length: 3.7-4.6 mm. Ratios. Width/length of pronotum: 1.42-1.45; width base/apex of pronotum: 1.37-1.42; width pronotum/head: 1.47-1.50; length/width of elytra: 1.51-1.57; length elytra/pronotum: 2.43-2.48.

Colour (Fig. 415). Piceous-black to black, lateral margins and base of pronotum, and lateral borders and apex of elytra reddish translucent. Elytra with a large, elongate, wedge-shaped reddish sutural spot that occupies a large area from near base to near apex and leaves anteriorly a small margin and posteriorly larger lateral parts of the elytra black. Lower surface of head and thorax piceous, abdomen reddish-piceous. Mouth parts, antennae, and legs dark reddish, tibiae and tarsi barely darker.

Head (Figs 225a-d). Rather short, moderately wide, rather depressed. Anterior border gently convex, lateral angle rounded, laterally not projecting, lateral borders straight behind eyes. Clypeal



Figs 225a-l. *Adelotopus cuneatus*, spec. nov. Details of head and genitalia. For legends see fig. 100.

suture rather indistinct, somewhat triangular, sometimes almost invisible. Labrum rather wide and short, moderately overlapped by the clypeus, apex feebly concave, quadrisetose. Antennal groove laterally convexly bordered, latero-posteriorly with slightly convex area. Mental tooth triangular, rather short, apex acute. Wings of mentum wide, laterally oblique, apex widely rounded. Glossa fairly wide, tongue-like, apically convex, ventrally with distinct keel, at border with c. 6 elongate setae. Terminal palpomere of maxillary palpus elongate, not securiform. Terminal palpomere of labial palpus fairly wide, rather securiform. Antenna short and wide, 8th-9th antennomeres almost 2.5 × as wide as long. Microreticulation absent, puncturation extremely fine and sparse, almost invisible. Surface with very weak sulcus medially of eyes, impilose, highly glossy. Ventrolaterally of eyes with a row of short setae. Suborbital field punctate and shortly setose. Gula impilose.

Pronotum (Fig. 415). Moderately narrow, highly convex, distinctly wider than long, base distinctly wider than apex, widest at base. Apical angles feebly produced, at apex obtusely rounded, fairly oblique, just surpassing posterior border of eyes. Apex fairly excised, slightly convex in excision, unbordered. Sides more or less distinctly convex, slightly oblique. Margins very narrow, barely chanelled, rather coarsely bordered. Basal angles rectangular, shortly rounded off. Base faintly convex, moderately coarsely, though superficially bordered. Surface near base without transverse impression. Microreticulation absent, puncturation very fine, sparse, sometimes very difficult to detect, surface impilose, highly glossy.

Elytra (Figs 415, 566). Moderately narrow and elongate, convex, though slightly depressed on disk, rather parallel, though faintly widened in apical half. Lateral borders faintly convex. Apex wide, slightly oblique, truncature barely convex, apical angles widely rounded off. Shoulders rounded, basal margin slightly oblique, without setae behind shoulders. Marginal channel in basal half moderate, then suddenly disappearing, partly concealed. Basal border incomplete, attaining outer third of base. Lateral border asetose. Series of umbilical pores consisting of 4 rather spaced pores behind shoulder. Setae fairly elongate. Striae including sutural stria absent. Microreticulation absent, puncturation moderately fine to fairly coarse, rather sparse, surface very sparsely and shortly setose, markedly glossy.

Lower surface. Prosternal process rather elongate, narrow, sharp, apex narow, compressed, passing over in an almost right angle from ventral surface, barely setose. Anterior border of

prosternum with dense fringe of very elongate setae. Metepisternum very elongate, c. 2.1 × as long as wide, in posterior third not hollowed, but becoming very narrow towards apex. Abdominal sterna with 1 elongate seta each side. Lower surface extremely sparsely punctate and very shortly setose.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, anterior plate overlapping the groove for apical half, posterior border of groove sharp. Femur wide. Metatibia short, <4.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide.

♂ genitalia (Figs 225e-k). Genital ring moderately wide, rather triangular, slightly asymmetric, with slightly asymmetric, rather small, barely excised base. Sternum VII rather wide, apically evenly convex, with rather deep excision, base faintly excised, basal angles rounded, lateral parts fairly short. Aedeagus short, moderately depressed, in middle widened, narrowed to apex, symmetric. Basal part fairly long, moderately bent. Lower surface concave, only towards apex convex. Apex moderately wide, widely rounded. Orifice rather elongate, internal sac complex, apparently without a distinct oblique fold near apex. Both parameres rather large, somehwta triagonal, with widely rounded apex, left paramere considerably larger than right.

♀ genitalia (Fig. 225l). Stylomere rather wide, strongly tapering to apex, apex narrow, obliquely convex, with 2-3 elongate apical setae. Lateral plate rather short, with 3-4 elongate apical setae.

Variation. Some variation noted in size and distinctness of the elytral spot and in size of puncturation of the elytra.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gums besides mostly dry rivers, two specimens mounted together with ants of the genus *Iridomyrmex* Mayr on the same card. Dated specimens captured during the period from November to February. This is apparently an inland or dry country species.

Distribution (Fig. 646). Northwestern Victoria, adjacent southwestern New South Wales, Western Australia north to Fortescue River, ? Queensland. The latter record refers to two somewhat aberrant specimens from Clermont from the Spence Collection, identified as *A. maculipennis* Macleay. It is possible, that the label was confounded, because *A. maculipennis* occurs only in Queensland.

Material examined (55). The type series and two specimens doubtfully assigned to this species: 1♂, 1♀, Clermont, 14.X.29 Dr. K. K. Spence, K 63509, *A. maculipennis* (AMS). They are apparently not fully coloured and bear a smaller elytral spot intermediary between that of *A. cuneatus*, spec. nov. and *A. maculipennis* Macleay. The dark pronotum and the coarser puncturation, however, match better *A. cuneatus*.

Etymology. The name refers to the wedge-shaped elytral spot.

7.4. Genus *Cainogenion* Notman

Cainogenion Notman, 1925, p. 11, 30; Csiki 1933, p. 1636; Matthews 1980, p. 10; Moore 1983, p. 78; Moore et al. 1987, p. 53.

Type species: *Adelotopus ipsoides* Westwood, 1837, by original designation.

Diagnosis. Genus of Pseudomorphinae, delimited by following characters: Body fairly wide, dorsally rather depressed, elytra rather rectangular; whole surface, but especially pronotum and elytra with very coarse puncturation; head still prognathous but directed downwards, rather deeply imbedded in prothorax; eyes situated laterally, without ventral border; clypeus partly fused to frons; labrum markedly divided from clypeus by a very deep sulcus, at base overlapped by the clypeus; supraorbital, preorbital, suborbital, mental, and gular setae absent; antennal grooves deep but rather short, medioventrally widely overlapped by the very large, foliaceous lateral plate of maxilla; lateral border of head below eyes with a deeply hollowed suborbital cavity the border of which bears a projecting tubercle; antenna shortened, moniliform; glossa variable, more or less tongue-like, with two to about 16 elongate apical setae; paraglossa partly fused to glossa; lateral plate of maxilla very large, foliaceous; labial palpi markedly securiform; ventral surface of head short, partly concealed by the mouth parts; prosternal process convex, rather short, between coxae carinate; number of umbilical pores of elytra reduced; femora and tibiae compressed, femora with deep tibial grooves; tarsi short and stout;

♂ sternum VII not excised; ♂ sternum VIII not divided, highly asymmetric; aedeagus with moderately complicately folded internal sac; parameres fairly similar, though left paramere always considerably larger; ♀ stylomeres 1 and 2 fused, foliaceous; no distinct dorsal ensiform seta, ventral ensiform setae, and nematiform setae present, but with variable number of apical or subapical setae on medio-apical surface not arising from a pit.

Larvae. 1st instar larvae known of 5 species and one additional subspecies.

Distribution. Australia. So far 12 species and additional 2 subpecies are known.

Systematic position. It is the in many respects plesiomorphic adelphotaxon of the genus *Paussotropus*, and both genera together form the adelphotaxon of the genus *Adelotopus*.

Note. The small species *Cainogenion ephippiatum* (Newman) differs from all other species by several important characters and represents apparently the adelphotaxon of all other species. It is in several respects plesiomorphic, but bears also some remarkable apomorphic character states. Therefore it is placed in an own subgenus *Procainogenion* (see below).

7.4.1. Description of *Cainogenion*

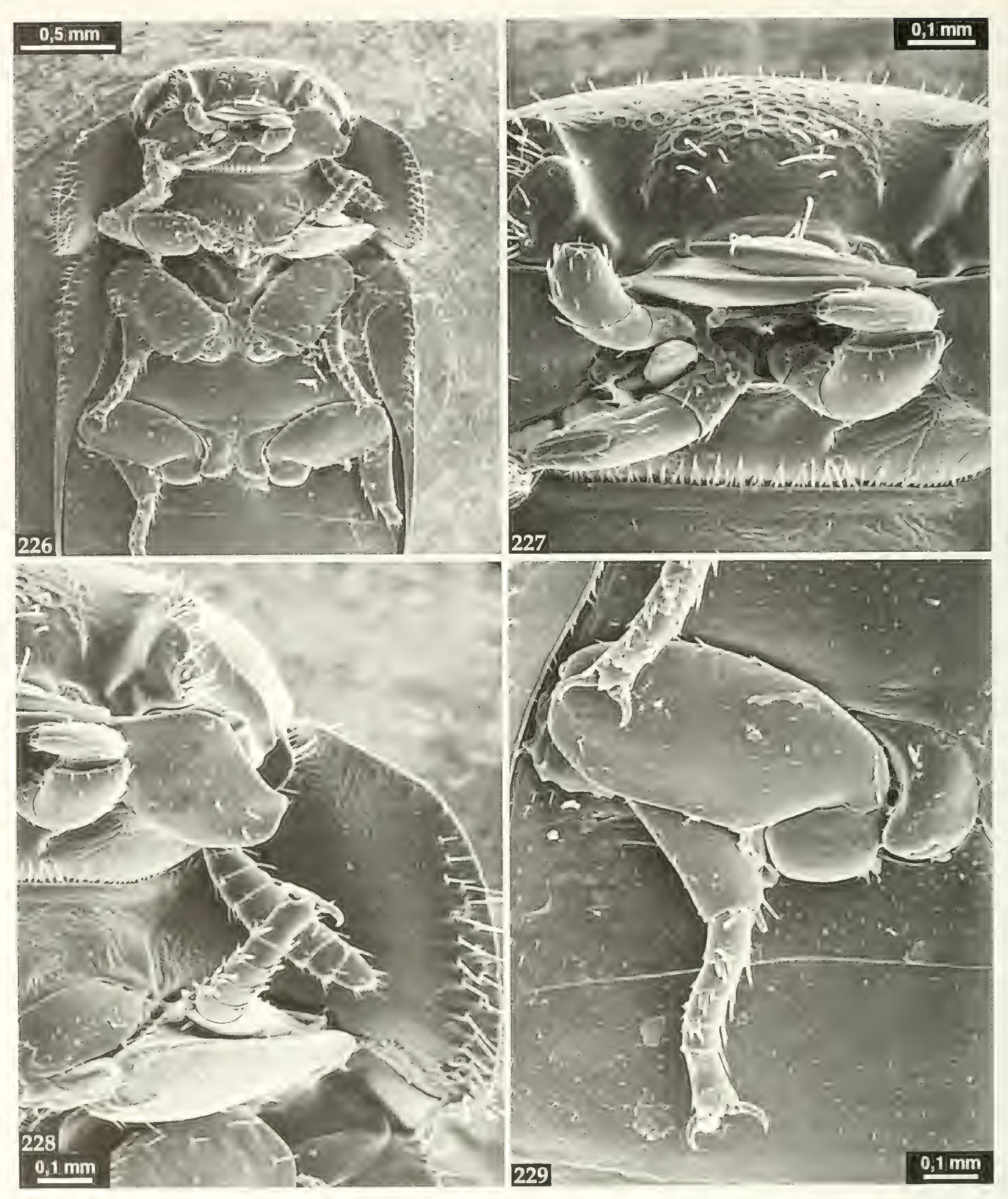
Species of *Cainogenion* exhibit the following character states:

Size and shape. Small to moderately large species (c. 3.8-8.0 mm) of fairly wide and depressed, rather rectangular-elongate form.

Colour and pattern (Figs 69-72). Surface either unicolourous piceous-black or reddish, or with a large, more or less well delimited reddish spot on centre or anterior ⅔ of elytra. Ventral surface usually slightly lighter than dorsal surface, especially abdomen commonly reddish or becoming lighter towards apex. Mouth parts, antennae, and legs mostly coloured like lower surface, tibiae and tarsi commonly darker.

Microsculpture (Figs 567-594). Dorsal surface usually with marked microreticulation that is in some species reduced to a large extent, or is indistinct within the very dense and coarse puncturation. Whole surface with very coarse, more or less dense puncturation, punctures sometimes, especially on head and pronotum markedly rugose with very sharp edges. In some species parts of head, pronotum, and elytra without puncturation. Puncturation of head usually finer than on pronotum and in particular on elytra. Elytral striae absent, sometimes vaguely marked by irregular sulci. Surface usually with more or less dense pilosity, rarely completely impilose, usually at least frons with some pilosity. Lateral border of head and clypeus usually with some elongate setae. Commonly lateral margins of pronotum and elytra with a fringe of more or less elongate setae.

Head (Figs 226-228, 230-235, 237252). Short and rather wide, deeply imbedded in prothorax, labrum and mandibles directed anterior-ventrally. Surface slightly convex. Eyes large, ventrally without border, laterally slightly protruding. Lateral margin of head in front of eyes distinctly borderd or not, sometimes angulate or with horn-like process, commonly with a tuft or fringe of elongate setae. Below eyes with a deep suborbital groove the lower margin of which is laminate and bears a more or less acute spine and a tuft of hairs in anterior half. The walls of the suborbital groove smooth. Clypeus more or less fused to frons, commonly clypeal suture in middle widely interrupted, clypeus commonly impressed and at anterior margin excised, usually with several elongate setae, rarely without such setae and then with only a single seta below lateral margin. Labrum rather large, quadrate or slightly square, divided from clypeus by a very deep sulcus, the base more or less widely overlapped by the clypeus, directed anterio-ventrally. Anterior margin of labrum slightly convex or more or less excised, quadrisetose to, more commonly, about 10-setose. Mandibles wide, depressed, without scrobe, strongly curved, outer margin obtusely rectangular, base mostly concealed by the labrum, directed anterio-ventrally. Mentum not divided from submentum by a suture, with distinct, acute, elongately triangular tooth. Gula very short, without distinct gular sutures. Glossa moderately to very large, more or less tongue-like, directed ventro-posteriorly, margin with variable number (c. 2-16) of elongate setae, dorsal surface usually shortly pilose. Paraglosse fused to base of glossa. Wings of mentum moderately elongate, usually acute at apex. Labial palpus larger than maxillary palpus, terminal palpomere always distinctly securiform, rather densely pubescent. Galea and lacinia small to very small, elongate, completely covered by the glossa, not visible from below and so deeply hidden below



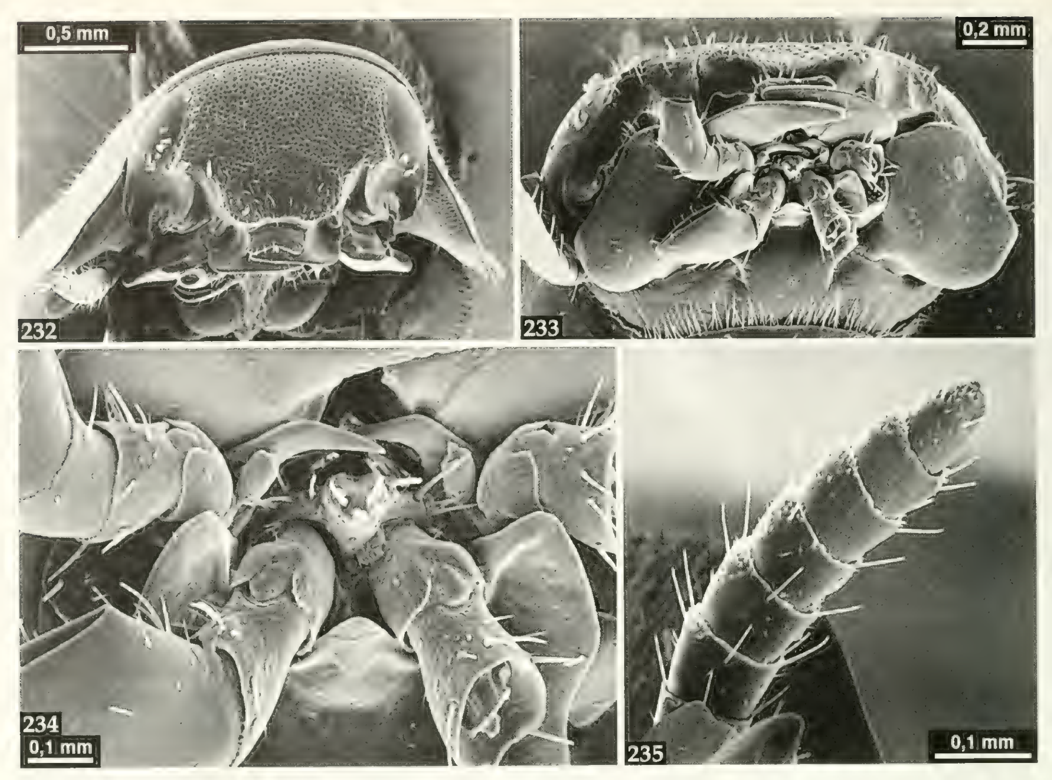
Figs **226-229.** *Cainogenion (Procainogenion) ephippiatum* (Newman). **226.** Ventral view of head and thorax. **227.** Labium and palpi, frontal view. **228.** Lateral plate of labium, lower surface of pronotal lobes, left antenna and anterior tarsus, ventral view. **229.** Right posterior leg, ventral view.

the glossa that they presumably do not play an important role in the process of absorption of food. Lacinia slightly curved, with a fine fringe of setae along inner border. Maxillary palpus pubescent, terminal palpomere rather narrow and parallel to moderately securiform. Maxilla with a very large, laminate lateral plate that ventrally overlaps the antennal grooves and laterally surpasses the lateral margin of the head and even the margin of the suborbital groove. Antenna inserted below eye, in deep antennal groove between ventral surface of eye and orbit and laminate lateral plate of maxilla. Lateral



Figs 230-231. *Cainogenion (Procainogenion) ephippiatum* (Newman). **230.** Frontal view of head. **231.** Labrum and mandibles, dorsofrontal view.

border of antennal groove usually angulate or carinate. Antenna short, moderately depressed, widened in middle, with median antennomeres invariably wider than long. Lateral margin of antenna sparsely setose, middle glabrous. Apart from the labral setae no additional fixed setae present on head,



Figs 232-235. *Cainogenion* (s. str.) *obscurum* (Castelnau). **232.** Dorsofrontal view of head. **233.** Ventral view of head. **234.** Mental tooth, glossa, galeae. **235.** Right antenna, ventral view.

though lower surface usually with some sparse pilosity at least on lateral plate of maxilla.

Microreticulation of head present, though commonly very indistinct within the very dense and rugose puncturation. Microreticulation rarely superficial, though always present, usually consisting of isodiametric meshes. Puncturation variable, most commonly very dense and rugose, more rarely fine and sparse, then usually not rugose. In some species surface with more or less dense, though usually very fine wrinkles or lines, surface usually with more or less dense and elongate pilosity, rarely without pilosity.

Prothorax (Figs 416-429). Pronotum short and wide, slightly wider than elytra, middle convex, lateral parts more or less conspicuously explanate. Apical margin in middle somewhat excised but markedly convex, laterally again sinuate. Hence margin with two usually obtusely rounded protrusions, one near eye, the other at the anterio-lateral angle. The latter obtusely rounded or completely rounded off. Lateral margins more or less evenly convex. Basal angles obtuse or more or less widely rounded off, commonly produced backwards. Basal margin usually in middle convex, rarely straight, laterally commonly somewhat concave. Apex and base not or very inconspicuously bordered, lateral margins not bordered. Surface without or with very inconspicuous median line, in posterior part sometimes with very shallow, transverse impression across surface. Microreticulation usually distinct, sometimes superficial, commonly indistinct within the dense puncturation. Puncturation usually corse and dense or very dense, seldom more sparse, commonly rugose and with sharp edges, then punctures like impressions of raindrops. Usually punctures smaller at apex, base, and lateral margins, sometimes base and lateral parts more extensively smooth, surface very dull to fairly glossy. Apical and basal angles without setae, though commonly lateral margin at and below margin with a fringe of more or less elongate setae. Surface without or with more or less short and sparse pilosity. Sternum convex between procoxae, narrow and more or less distinctly keeled, posteriorly surpassing coxae. Sternum bordered along anterior margin of procoxae, at anterior margin with a dense fringe of elongate setae.

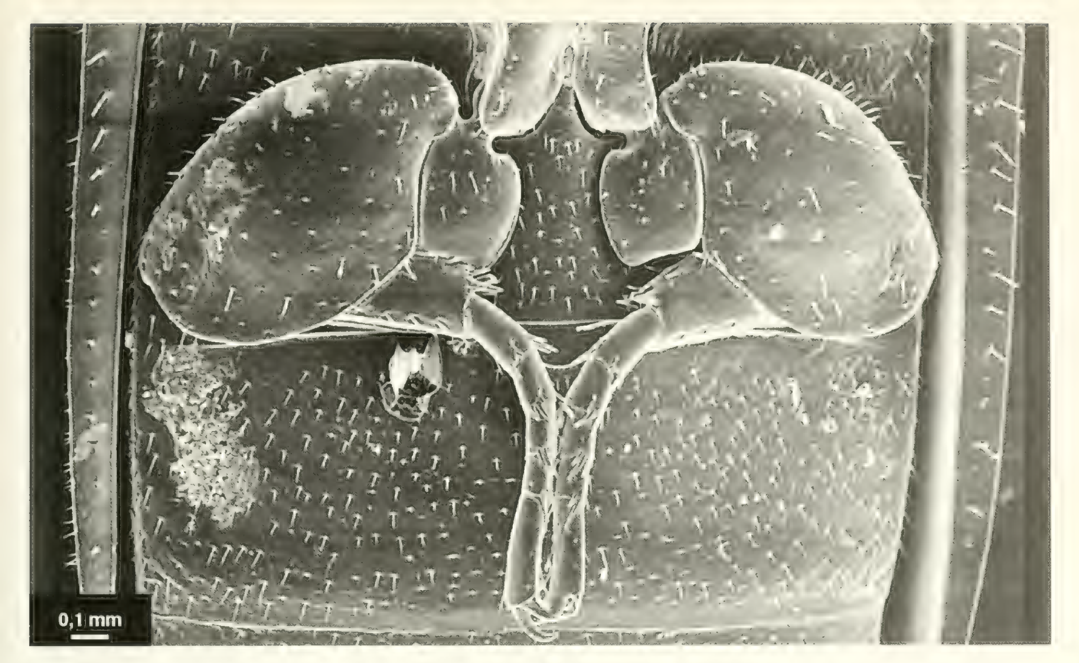


Fig. 236. *Cainogenion* (s. str.) *obscurum* (Castelnau). Posterior legs, ventral view.

Elytra (Figs 416-429). Free. Rather elongate and parallel, depressed on disk. Lateral margins rather parallel, base laterally obliquely rounded, shoulders evenly rounded off, apex wide, transverse or even faintly concave, lateral apical angles obtusely rounded. Lateral margin rather wide, chanelled, marginal channel slightly widened in basal third, diminishing before posterior angles, completely visible. Epipleurae on ventral surface, not visible from above. Basal border absent. Striae absent, sometimes vaguely indicated by irregular longitudinal furrows. Microreticulation commonly fine, though distinct, seldom superficial, surface usually moderately or very dull. Puncturation variable, more or less coarse, usually very dense, rarely more sparse, then usually with large non-punctate areas at shoulders, apex, and along lateral margins. Commonly puncturation rugose or punctures with sharp edges. Scutellar pore absent. Umbilical pores reduced in number, up to 6, irregularly situated behind shoulder. Base in front of shoulders with a row of elongate setae, usually also whole lateral margin a fringe of more or less elongate setae. Surface without or with more or less short and sparse pilosity.

Wings. Fully developed.

Ventral surface (Fig. 226). Anterior coxae biperforate and closed. Median coxal cavities conjunct. Metepisternum elongate, c. 2 × as long as wide at anterior border, posteriorly not bent nor hollowed. Abdominal sterna without ambulatory setae, but whole abdomen with fairly sparse, short pilosity. Sternum VII without tactile setae.

Legs (Figs 228, 229, 236). Rather short. Femora large, wide, depressed, with deep furrow on ventral surface to receive most of tibiae. Furrows asymmetric, in profemur on posterior side, in mesofemur and metafemur on anterior side with large plate that widely overlaps the furrow. Tibiae short and depressed, tarsi short and stout, slightly depressed dorsoventrally. 1st tarsomere of protarsus shorter than wide, 1st tarsomere of metatarsus barely longer than wide. Ventral surface of tarsi asetose apart from fixed setae and of a single pair of setae on ventral surface of 5th tarsomere. Dorsal surface of tarsi asetose. ♂ protarsus and mesotarsus not widened, without adhesive pads. Tarsal claws smooth.

Male genitalia. Sternum VIII not divided, asymmetric, with asymmetric excision of different form at apex. Genital ring more or less triangular with fairly excised basal plate. Aedeagus conchiferous, rather elongate, not or slightly asymmetric, with obtuse or acute apex. Internal sac more or less complicately folded, usually with two elongate parallel folds. Orifice elongate, situated in middle. Parameres rather dissimilar, left paramere considerably larger and wider than right, right paramere elongate, slightly triangular.



Figs 237-238. Genus *Cainogenion*. Ventral view of head. **237.** *Cainogenion ephippiatum* (Newman). **238.** *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood).

Female genitalia (Fig. 97). Sternum VIII symmetric, with acute to evenly rounded lateral margin and more or less elongate basal process. Stylomeres 1 and 2 fused to a more or less wide, commonly triangular plate of varied shape. Rarely a faint line visible between former stylomere 1 and 2, in that case, the apical part (stylomere 2 rather short and widely rounded off). Ventral ensiform setae, dorsal ensiform setae, and nematiform setae not distinguished, but a varied number of apical or preapical setae present that do not originate in a pit. Lateral plate very large, with a varied number of elongate apical setae on median apical angle. Larviparous.

7.4.2. Key to the species of the genus *Cainogenion* Notman

1. Small species, usually <5.0 mm long. Basal angles of pronotum evenly rounded off, base without any sinuosity near basal angles **and** microreticulation of pronotum and elytra superficial, surface rather glossy (Figs 416, 567, 568). In front of eyes with a distinct boss that is connected by a semicircular ridge with the markedly projecting apex of the ventral lamina of the suborbital groove (Fig. 239a). Apex of glossa narrow and 2-setose (Figs 226, 227, 237). Aedeagus short, rather asymmetric, ventral surface strongly striped (Figs 239g,h). ♀ sternum VIII with short, rounded basal process and with widely rounded lateral margins (Fig. 239f). e. SA to ce. Qld. Subgenus *Procainogenion*, subgen. nov. .... *ephippiatum* (Newman)

– Larger species, usually >5.0 mm long. Basal angles of pronotum usually obtuse or even angulate, base usually with distinct sinuosity near basal angles. When basal angles evenly rounded off, then microreticulation of pronotum and elytra very distinct and surface dull (Figs 421, 577, 578). In front of eyes without boss. Apex of the ventral lamina of the suborbital groove less projecting (Figs 240a-252a). Apex of glossa wider, polysetose (Figs 233, 234). Aedeagus longer, rather symmetric, ventral surface not markedly striped (Figs 240g,h-242g,h, 245g,h-249g,h, 252g,h). ♀ sternum VIII with elongate, narrow basal process and with angulate lateral margins (Figs 240m, 245m, 248m). Subgenus *Cainogenion* s. str .... 2.

2. Basal angles of pronotum evenly rounded off, base without distinct sinuosity near basal angles. Apical angles of pronotum markedly projecting, almost rectangular (Fig. 421). Inland s. WA .... *rotundicolle*, spec. nov.

– Basal angles of pronotum not evenly rounded off, obtuse or almost angulate, base usually with distinct sinuosity near basal angles. Apical angles of pronotum less projecting, not rectangular (Figs 417-420, 422-429). Distribution varied .... 3.

3. Whole surface **distinctly** and more or less densely pilose .... 4.

– Surface usually impilose, though sometimes fine and sparse pilosity present on frons and on lateral parts of elytra .... 7.

4. Surface of clypeus distinctly concave, apex regularly excised **and** lateral border of head not with sharp and straight edge (Fig. 246a). e. Qld north to Townsville, n. NSW .... *subopacum* (Macleay)

– Surface of clypeus not distinctly concave, apex barely excised (Figs 245a, 247a). When clypeus slightly concave, then lateral border of head with sharp and straight edge (Fig. 248a) .... 5.

5. Pilosity of elytra rather sparse. Lateral border of head with straight and sharp edge. Clypeus wide, square, with almost rectangular though obtuse lateral angles (Fig. 248a). Basal angles of pronotum less produced posteriorly (Fig. 425). Basal process of ♀ sternum VIII short (Fig. 248m). Inland n. Qld .... *parumpilosum*, spec. nov.

– Pilosity of elytra usually dense. Lateral border of head with more irregular, less straight and sharp edge. Clypeus less square, more irregularly shaped, with irregularly oblique lateral angles (Figs 245a, 247a). Basal angles of pronotum markedly produced posteriorly (Figs 422, 424). Basal process of ♀ sternum VIII longer (Fig. 245m). Distribution different .... 6.

6. Elytra usually with distinct light spot (Fig. 422). Aedeagus longer, narrower, more asymmetric, with wider, more rounded apex (Fig. 245g). Parameres shorter, upper margin of right paramere straight (Figs 245i-k). Excision of sternum VII wider (Fig. 245e). e. SA, e. Vic, e. NSW, ACT, se. Qld .... *obscurum* (Castelnau)

– Elytra unicolourous (Fig. 424). Aedeagus shorter, wider, symmetric, with narrower, more acute apex (Fig. 247g). Parameres longer, upper margin of right paramere distinctly sinuate (Figs 247i-k). Excision of sternum VII narrower (Fig. 247e). c. and n. NT, ne. WA .... *interiore*, spec. nov.

7. Surface of clypeus and adjacent part of frons deeply concave (Fig. 252a) **and** colour uniformly dark piceous **and** microreticulation of head very strong, hence puncturation difficult to see. ne. Qld . ... *clypeale*, spec. nov.

– Surface of clypeus and adjacent part of frons not deeply concave. When clypeus somewhat concave, then either colour not uniformly dark piceous **or** puncturation of head distinct. Distribution different .... 8.

8. Colour uniformly reddish or reddish-piceous. Lateral margin of pronotum and elytra without a fringe of setae **at** border (though with short setae below border). Puncturation of head fine and sparse, surface finely striolate .... 9.

– Colour not uniformly reddish or reddish-piceous, either darker, or with distinct elytral spot, or piceous with lighter margins of pronotum and elytra. Lateral margin of pronotum and elytra with a fringe of setae **at** border. Puncturation of head coarse and very dense, surface not striolate .... 10.

9. Pronotum narrower, more convex, basal angles distinctly produced backwards (Fig. 427). Elytra elongate, convex, on disk less depressed. ♀ stylomere wider (Fig. 250l). s. SA .... *glabratum*, spec. nov.

– Pronotum wider, less convex, basal angles barely produced backwards (Fig. 428). Elytra shorter, less convex, on disk distinctly depressed. ♀ stylomere narrower (Fig. 251l). Interior of sw. WA . ... *depressum*, spec. nov.

10. Elytra with distinct light discal spot. Fringe of setae along margins of pronotum and elytra short (Fig. 426). Lateral margin of head near clypeus with several conspicuous oblique ridges. Margins of clypeus impilose (Fig. 249a). e. Qld .... *tropicum*, spec. nov.

– Elytra without distinct light discal spot. Fringe of setae along margins of pronotum and elytra elongate (Figs 417-420). Lateral margin of head near clypeus without conspicuous ridges. Margins of clypeus pilose (Figs 240a-243a). Distribution different .... 11.

11. Apex of clypeus distinctly concave, lateral angles regularly rectangular though somewhat obtuse; lateral margin of head not carinate throughout (Figs 240a, 241a). Apex of pronotum laterally not markedly concave. Shoulders usually impunctate or sparsely punctate (Figs 569, 571). Aedeagus longer, slightly asymmetric (Figs 240g, 241g). ♀ stylomere narrower (Figs 240l, 241l) .... 12.

– Apex of clypeus not or barely concave, lateral angles irregularly oblique; lateral margin of head carinate throughout (Figs 242a, 243a). Apex of pronotum laterally markedly concave. Shoulders usually densely punctate (Figs 573, 575). Aedeagus shorter, symmetric (Fig. 242g). ♀ stylomere wider (Fig. 242l) .... 13.

12. Elytra slightly longer. Pronotum less coarsely punctate. Clypeus anteriorly less concave; anterior angle of suborbital plate widely rounded (Fig. 240a). Genital ring narrower and less convex, aedeagus longer, apex of left paramere obliquely transverse (Figs 240f-k). e. SA, Vic, e. NSW, ACT, s. Qld .... *ipsoides ipsoides* (Westwood)

– Elytra slightly shorter. Pronotum more coarsely punctate. Clypeus anteriorly more concave; anterior angle of suborbital plate angulate (Fig. 241a). Genital ring wider and more convex, aedeagus shorter, apex of left paramere evenly rounded (Figs 241f-k). sw. WA .... *ipsoides occidentalis*, subspec. nov.

13. Lateral margin of head finely pilose, less strongly carinate (Fig. 242a). Prosternal process not markedly carinate. Puncturation of head denser and finer. Puncturation of shoulders usually sparser (Fig. 573). e. SA, w. Vic, se. NSW .... *creberrimum creberrimum* (Blackburn)

– Lateral margin of head impilose, more strongly carinate (Fig. 243a). Prosternal process markedly carinate. Puncturation of head less dense, coarser. Puncturation of shoulders very dense (Fig. 575). nw. NSW .... *creberrimum gnaltae*, subspec. nov.

7.4.3. The species of the genus *Cainogenion* Notman

7.4.4.1. Subgenus *Procainogenion*, subgen. nov.

Type species: *Adelotopus ephippiatus* Newman, 1856 by monotypy.

Diagnosis: The diagnosis corresponds in most respects to the genus diagnosis. It differs from this in the following respects: labrum elongate, about quadrate, at apex gently convex, not overlapped by the clypeus, quadrisetose; glossa bisetose; anterior margin of head with a pronounced boss; prosternum not compressed in front of procoxae; ♀ sternum VIII at apex evenly rounded off, without elongate setae.

Larva. Unknown.

Distribution. Australia. A single species known.

Systematic position. It is the generally more plesiotypic adelphotaxon of the subgenus *Cainogenion* s. str.

Cainogenion ephippiatum (Newman, 1856)

Figs 69, 226-231, 237, 239, 416, 567, 568, 647

Adelotopus ephippiatus Newman, 1856, p. 127.
Cainogenion ephippiatum, Notman 1925, p. 11, 30; Csiki 1933, p. 1637; Moore et al. 1987, p. 53.
Adelotopus bicolor Castelnau, 1867, p. 34; 1868, p. 120.
Cainogenion bicolor, Notman 1925, p. 11, 30; Csiki 1933, p. 1636; Moore et al. 1987, p. 53 (**new synonymy**).

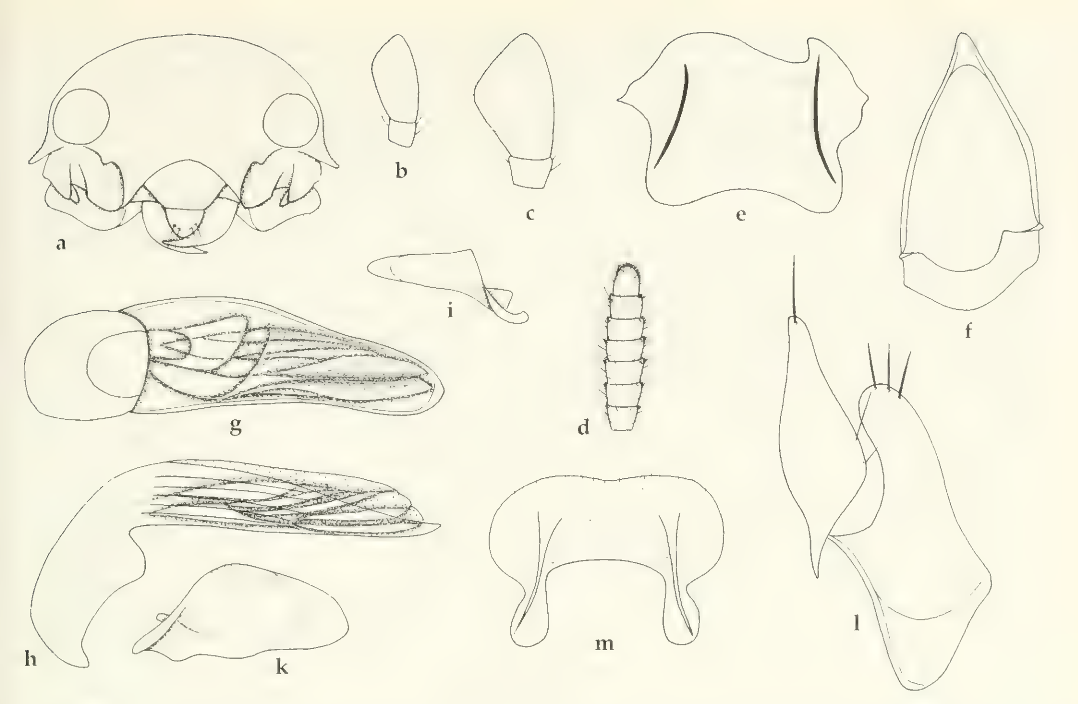
Types. Of *ephippiatum*. Lectotype (by present designation): ♂, Type H. T., *Adelotopus ephippiatus* Newm. L. 502 (BMNH).

Of *bicolor*. Lectotype (by present designation); ♂, Loddon River (Victoria) Coll. Castelnau, Loddon, *bicolor* Cast. Loddon Riv., Syntype *Adelotopus bicolor* Castelnau, 1867 (MCSN). – Paralectotypes: 2♂♂, same data (MCSN).

Type localities. Of *ephippiatum*: No locality given. – Of *bicolor*: "Loddon River", Victoria.

Note. The synonymy of both species was stated by the comparison of the types and the ♂ genitalia.

Diagnosis. Small, rather narrow, depressed, piceous species with a large, yellowish spot in the anterior half of the elytra a fringe of short setae on the margins of pronotum and elytra, rather wide, markedly quadrate pronotum, dentiform, projecting ventrolateral borders of head beyond eyes, markedly projecting anterior angle of suborbital lamina, deeply removed, elongate labrum, and short pilosity.



Figs 239a-m. *Cainogenion (Procainogenion) ephippiatum* (Newman). Details of head and genitalia. **a.** Frontal view of head. **b.** Lower surface of terminal palpomeres of maxillary palpus. **c.** Lower surface of terminal palpomeres of labial palpus. **d.** 5th-11th antennomeres. **e.** ♂ sternum VII. **f.** ♂ genital ring. **g.** Lower surface of aedeagus. **h.** Lateral view of aedeagus. **i.** Right paramere. **k.** Left paramere. **l.** ♀ stylomeres and lateral plate. **m.** ♀ sternum VIII.

Description

Measurements. Length: 3.8-5.0 mm. Ratios. Width/length of pronotum: 1.62-1.69; width pronotum/head: 1.68-1.72; length/width of elytra: 1.53-1.57; length elytra/pronotum: 2.47-2.67.

Colour (Figs 69, 416). Piceous, all margins of pronotum, lateral margins of elytra, and suture in posterior half faintly reddish translucent. Anterior half of elytra with a large, more or less distinct yellowish spot. Lower surface including mouth parts, antenna and legs reddish piceous to reddish, abdomen usually slightly lighter.

Head (Figs 226-228, 230, 231, 237, 239a-d). Rather short, fairly wide, frons slightly convex. Eyes rather large. Lateral border of head just below eye with a strongly projecting, blunt tubercle that is in connection with the subocular lamina. This tubercle with a tuft of elongate setae. Ventromedially of the tubercle lateral border oblique, without any border or ridge. Suborbital cavity deeply hollowed, suborbital lamina anteriorly remarkably prolonged, spoon-shaped, strongly projecting, then deeply incised, behind this incision with large, acute tooth-like process at same level, inner wall of cavity smooth. Clypeal suture rather indistinct, semicircular, not interrupted. Clypeus convex, remarkably incurved ventrally, margin not visible from above, with several elongate setae on disk and along margin. Labrum separated from clypeus by deep furrow, but not overlapped, situated far ventrally, directed obliquely anterior-ventrally, very elongate, about as long as wide, apex gently convex, with 4 elongate setae. Mandible basally less wide, external margin almost evenly curved. Antennal groove extremely deep, laterally and posteriorly sharply bordered, these borders even laminate. Mental tooth large, elongate, triangular, apex rather acute. Wings of mentum narrow and elongate, apex acute. Glossa very narrow and elongate, tapering, apex narrow, slightly obtuse, with 2 elongate setae. Paraglossae apparently fused to base of glossa, lateral margin of glossa with some shorter setae on either side. Terminal palpomere of maxillary palpus rather elongate, in middle slightly widened. Terminal palpomere of labial palpus widened, though not securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border concave, angles widely rounded. Antenna moderately wide,

median antennomeres c. 2 × as wide as long. Microreticulation present, though indistinct within the coarse and very dense puncturation, punctures deeply impressed and with sharp margins. Surface shortly pilose, dull, coriaceous. Lateral margin of head without setae apart from the dentiform projection, lateral border of suborbital lamina with fringe of elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate with some elongate setae. Gula impilose.

Pronotum (Fig. 416, 468). Wide, rather quadrate, in middle convex, lateral margins but slightly explanate. Base distinctly wider than apex, widest about in middle. Apex in middle deeply excised, though fairly convex, markedly produced near eyes, laterally oblique, fairly concave. Apical angles almost evenly rounded, barely projecting. Apex not bordered. Sides slightly convex, almost parallel, unbordered. Basal angles evenly and widely rounded off. Base in middle slightly convex, not bordered. Surface near base with inconspicuous transverse impression. Lateral margin on border with rather sparse, moderately elongate setae, below border with denser, more elongate setae. Microreticulation almost absent on disk, absent on marginal explanation, puncturation moderately coarse, though at apex finer, very dense, even near base, on lateral explanation sparser, not rugose. Surface shortly pilose, rather glossy.

Elytra (Figs 69, 416, 467). Rather elongate, moderately convex, markedly depressed on disk, rather parallel. Lateral borders distinctly excised in anterior half, widest in middle, then narrowed. Apex wide, oblique, drawn inside, truncature faintly convex, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel anteriorly wide, partly concealed, in posterior half completely reduced. Basal border line absent. Lateral margin on border in anterior half with moderately elongate, rather sparse setae, below border with more elongate setae. Series of umbilical pores apparently consisting of c. 3-4 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, no traces of striation visible. Microreticulation extremely indistinct, almost absent, puncturation comparatively fine, dense, slightly coarser than on pronotum, less coarse near scutellum, at apex, and laterally, not rugose. Shoulders, apex, and lateral part almost regularly punctate. Surface with very spare and extremely short pilosity, rather glossy.

Lower surface (Fig. 226). Prosternal process rather short, narrow, convex, posteriorly even carinate, evenly convex, apex passing over regularly from ventral surface, elongately setose. Metepisternum elongate, slightly >2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather sparsely and shortly punctate and setose.

Legs (Figs 228, 229). Rather short, 1st tarsomere of protarsus c. as wide as long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia rather short, c. 4 × as long as wide, 1st tarsomere of metatarsus c. 1.5 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 239e-k). Genital ring fairly wide, convex, slightly asymmetric, with rather short apex, rather large, slightly asymmetric, deeply excised base. Sternum VII comparatively wide, apically evenly convex, with rather deep and elongate excision, base deeply concave, basal angles rounded, lateral parts fairly elongate. Aedeagus rather short, depressed, behind middle slightly widened, in front of middle faintly narrowed, somewhat asymmetric. Basal part long, markedly bent. Lower surface almost straight, markedly striate. Apex wide, apically obtuse, symmetric. Orifice rather elongate, internal sac moderately complex. Both parameres elongate, with slightly angulate apex, left paramere considerably larger than right, slightly triangular, moderately striped.

♀ genitalia (Figs 239l,m). Sternum VIII short, laterally widely rounded off, basal process short and wide, and almost circular. Stylomere rather wide in middle, with attenuate, shortly rounded apex, apex with 1-2 elongate apical setae, laterally with additional 0-2 more or less elongate setae. Lateral plate elongate, with 2-3 fairly short apical setae.

Variation. Apart from considerably variation of size, some differences of shape of pronotum and elytra and of colour noted. Otherwise a rather homogeneous species.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Specimens collected by me under bark of gum-type eucalypts by small ants, perhaps of genus *Crematogaster* Lund or related genera, some specimens mounted together with ants of genus *Crematogaster* Lund on same card, other collected "under bark of *Eucalyptus* within ants",

and "under Eucalypt. bark". Dated specimens captured in almost all months except for April and May, though most during summer.

Distribution (Fig. 647). Eastern South Australia, Victoria, Australian Capital Territory, eastern New South Wales, southern and central eastern Queensland; ? Tasmania. The single record from Tasmania refers to two undated specimens determinated as *(Cryptocephalomorpha) gaverei*! and is presumably wrong. The unspecified record from New Zealand is probably also wrong.

Material examined (156). **SA:** 1♂, 5 km s Riverton, 22.I.75 (1) P. J. M. Greenslade (ANIC); 1♂, det. *ephippiatum* (BMNH). – **Vic:** 1♂, Birchip: J. C. Goudie, *Adelotopus* n. to Lea (NMV); 1♀, Birchip J. C. Goudie, *Adelotopus bicolor* Cast., J. C. Goudie Coll. (NMV); 1♀, Birchip J. C. Goudie, *Adelotopus bicolor* Cast. Q., comp. (?) 4.IX.07 (ANIC); 1♂, 1♀, Birchip J. C. Goudie, 286, Mus 7672 Bonabra N.S.W., 19157 *Adelotopus* Vic: N.S.W. (SAMA); 1♂, 1♀, Ararat G. F. Hill (SAMA); 3♂, Loddon River Coll. Castelnau, Loddon, *bicolor* Cast. Loddon Riv., lectotype!, paralectotypes! (MCSN); 1♂, *bicolor* Castel Riv. Loddon, Ex Musaeo Mniszech (MNHN); 1♂, Fitzroy River, B. M. 1928-116., *Adelotopus ephippiatus* (BMNH); 2♂♂, Fitzroy River, B. M. 1928-116., det. *ephippiatus* (BMNH); 1♂, 1♀, Melton, F. E. Wilson 2.XI.40, F. E. Wilson Coll., det. *ephippiatum* (NMV); 1♂, 1♀, Melton, F. E. Wilson 22.XII.45, F. E. Wilson Coll., det. *ephippiatum* (NMV); 1♀, Melton, F. E. Wilson 26.XII.52, *Cainogenion cylindricunm* Chaud., *cylindricum* Chaud. 1609, J. G. Brooks Bequest (ANIC); 1♀, 4 miles west Melton, 3.II.1974 P. J. Gullan (UASM); 1♂, Melbourne, Soc. Ent. belg. Coll. PUTZEYS, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, 1♀, Strudley Park X.1940. C. Oke, *C. ephippiatum* (NMV); 1♀, K. M. Guichard Strudley Park, F. E. Wilson Coll., det. *ephippiatus* (NMV); 2♀♀, Strudley Park, J. E. Dixon, det. *ephippiatum* (NMV); 1♂, 1♀, Eltham, C. Oke, det. *ephippiatus* (NMV); 1♀, Baxter, C. Oke (NMV); 1♀, *bicolor* Castl, V. de Poll, *Adelotopus ephippiatus* Newm. ? = *A. bicolor* Cast. Id. by T. G. Sloane, H. E. Andrewes Coll., *bicolor* Cast. (BMNH); 1♀, Australie mérid. Dohrn, Ex Musaeo Chaudoir, *bicolor* Castelnau (MNHN); 1♂, 2591, W. Edwards, det. *ephippiatus* (MCZ); 1♀, Field Mus. (F. Psotas Coll.), *Cainogenion ephippiatum* Newm. det. G. E. Ball 1987 (FMNH), 1♀, 2591, W. Edwards, det. *ephippiatum* (MCZ); 2♂♂, 3♀♀, 2591, det. *ephippiatus* (AMNH); 1♀, 2591, Ex Musaeo H. W. Bates (MNHN); 1♀, 30146, Edwards, det. *ephippiatus* (BMNH). – **Tas:** 1♂, 1♀ Tasmania, 1916 26, det. *gaverei* (SMTD). – **ACT:** 1 (sex?), Canberra 16.II.1986 leg. Rheinheimer (ANIC); 2♂♂, 2♀♀, Black Mtn. 16.VII.67 K. Pullen, *Adelotopus* sp., Kim Pullen Coll. (ANIC); 2♂♂, 1♀, ACT 120 Canberra, Black Mt. 10.XII.1990, M. Baehr (CBM); 1♂, 1♀, Mt. Ainslie III.61 B. P. Moore, det. *bicolor* (CMC); 1♀, Mt. Ainslie 28.VIII.66 K. Pullen, Kim Pullen Coll. (ANIC). – **NSW:** 1♀, Monaro (MMS); 3♂♂, 3♀♀, 1 (sex?), Gundaroo Rd. 7.I.70 B. P. Moore (CMC); 1♀, "Calosoma" via Gundaroo 4.VI.87 B. P. Moore (CBM, CMC); 1♀, Illawarra H. J. Carter, H. J. Carter Coll., det. *ephippiatum* (NMV); 1♂, K 12335, *Adelotopus fasciatus* Casteln., Sydney, *A. fasciatus* (AMS); 1♂, Orange, XII.1916 H. J. Carter, H. J. Carter Coll., *C. ephippiatum* (NMV); 3♂♂, 1♀, Newnes, 6.VI.70, 3500'. G. Daniels per J. G. Brooks Q. 852, J. G. Brooks Bequest (ANIC); 3♂♂, 2♀♀, Newnes VI.70 GD., Q. 852, J. G. Brooks Bequest (ANIC); 1♂, Newnes, 3500', 6.VI.70 G. Daniels, *Cainogenion bicolor* Cast. Det. B. P. Moore '71 (CMC); 3♂♂, Newnes, 3500', 6.VI.70 G. Daniels, det. *bicolor* (CMC); 1♀, Carrathool F. H. Taylor, det. *ephippiatus* (AMS); 2♀♀, Girrawa (MMS); 1♀, Bonabra (?), 7672 *Adelotopus* (SAMA); 4♂♂, 1♀, Ar. ?. T.G.S. 25.XII.10 (ANIC). – **Qld:** 5♂♂, 7♀♀, Killarney T.G.S. 27.XII.10 (ANIC); 1♂, Cabarlah, T.G.S. 28.XII.10 (ANIC); 2♂♂, 5♀♀, Stanthorpe E. Sutton, E. Sutton Coll. (QMB); 3♂♂, 1♀, Ipswich II.67 J.K., M. 183., J. G. Brooks Bequest (ANIC); 1♀, Dalby, 27.II.39 N. Geary, det. *ephippiatus* (ANIC); 2♂♂, Bunya Mts 21.XI.30 E. Sutton, E. Sutton Coll. (QMB); 1♂, Gayndah (MMS); 1♀, Qld 28 Isaac River, 171 km n. Dingo, Fitzroy Dev. Rd. 12.XI.1990, M. Baehr (CBM); 1♀, Dohrn. 91 Port Denison, *Adelotopus bicolor* Casteln., 606., *bicolor* Cast. (NHMW); 1♂, Lawes 12.XII.51, ? (UQIC); 2♀♀, Janson Acq. (MNHN); 1♀, *Heteromorpha* Kirby, ? (OUM). – **Aus:** 1♀, N. Australia, Pascoe Coll., *castaneus* Cast. (BMNH); 1♀, 42155, Austr. bor., det. *bicolor* (MNHB); 1 (sex?), Hist.-Coll. Nr. 42155 Austral. bor. Coll. Schaum, det. *bicolor* (MNHB); 1♂, H. Edwards, *Cainogenion ephippiatum* Newm. (MCZ); 1♀, 39438, Stark., *bicolor* Vasteln. (MNHB); 2♀♀, 73.6, det. *ephippiatus* (BMNH); 1♂, H. Edwards, det. *ephippiatum* (MCZ); 1♀, *Adelotopus creberrens*, Dohrn (OUM); 1 (sex?), *Heteromorpha* Kirby -(y) (OUM). – **NZ:** 2♂♂, 2♀♀, Field Mus. (F. Psotas Coll.), *Adelotopus* (FMNH). – **?:** 1♀, Gunning (MMS); 1♂, Type H. T., *Adelotopus ephippiatus* Newm. L. 502, lectotype! (BMNH); 3♂♂, 1♀, Coll. L. W. Schaufuss, det. *bicolor* (MNHB); 1♂, 3♀♀, 41-44, Howitt Colln, det. *bicolor* (NMV); 1♂, *bicolor* Castl. sec. descr., Ex Musaeo H. W. Bates (MNHN); 1♂, 1♀, 1 (sex?), det. *ephippiatus* (MCZ); 3♀♀ (BMNH).

7.4.4.2. Subgenus *Cainogenion s. str.*

Type species: *Adelotopus ipsoides* Westwood, 1837, by original designation.

Diagnosis. The diagnosis corresponds in most respects to the genus diagnosis. It differs from this in the following respects: labrum short and wide, at apex straight or excised, deeply overlapped by the clypeus, polysetose; glossa polysetose; anterior margin of head without a pronounced boss; prosternum compressed in front of procoxae; ♀ sternum VIII apically transverse, laterally angulate, with 4 elongate setae.

Larvae. 1st instar larvae known of 5 species and one additional subspecies.

Distribution. Australia. So far 11 species and additional 2 subspecies are known.

Systematic position. *Cainogenion* s. str. is the adelphotaxon of the single species *(C. ephippiatum)* of the subgenus *Procainogenion*. In most respects it is more apomorphic than the latter.

Cainogenion ipsoides (Westwood, 1837)

This species includes two subspecies, an eastern one occurring from eastern South Australia to southeastern Queensland, and a western one in southwestern Australia.

Diagnosis. Rather large, moderately wide, uniformly piceous species with a fringe of elongate setae on the margins, though impilose surfaces of pronotum and elytra, not or barely concave surface of clypeus, distinct microreticulation of surface, and elongate aedeagus with slightly asymmetric apex. Further distinguished from *C. creberrimum* (Blackburn) by distinctly concave apex of clypeus, not distinctly carinate lateral margin of head, not markedly concave lateral parts of apical margin of pronotum, impunctate shoulders, generally sparser puncturation of surface, longer, narrower aedeagus, and slenderer stylomere.

Cainogenion ipsoides ipsoides (Westwood, 1837)

Figs 70, 97, 238, 240, 417, 569, 570, 648

Adelotopus ipsoides Westwood, 1837, p.413, tab. 28, fig. 2; 1853, p. 405; Germar 1848, p. 170; Lacordaire 1854, p. 154; Castelnau 1867, p. 34; 1868, p. 120; Macleay 1871, p. 95; Blackburn 1901a, p. 19.
Cainogenion ipsoides, Notman 1925, p. 11, 12, 30; Csiki 1933, p. 1637; Moore et al. 1987, p. 54.

Types. Lectotype (by present designation): ♀, Type H. T., A. H. Davis Adelaide, *Adelotopus* Hope *ipsoides* ~~Newm~~ West in Trans Vol XVIII p 413 (BMNH). – Paralectotypes: 1♂, Cotype, A. H. Davis Adelaide, Ent. Club 44-12., *Adel.* ~~*Dytiscides*~~ *ipsoides* var. Newm. Entomol 365., det. *ipsoides* (BMNH); 1♀, Type Westwood Trans Lin. Soc. 18. P. 413., T. 28. fig 2. Coll. Hope Oxon., A. H. Davis Adelaide, Type *Adelotopus ipsoides* Westw. don Trany(?) E. Newman, Type Col: 21 *Adelotopus ipsoides* Westw. Hope Dept. Oxford (OUM).

Type locality: "Adelaide", South Australia.

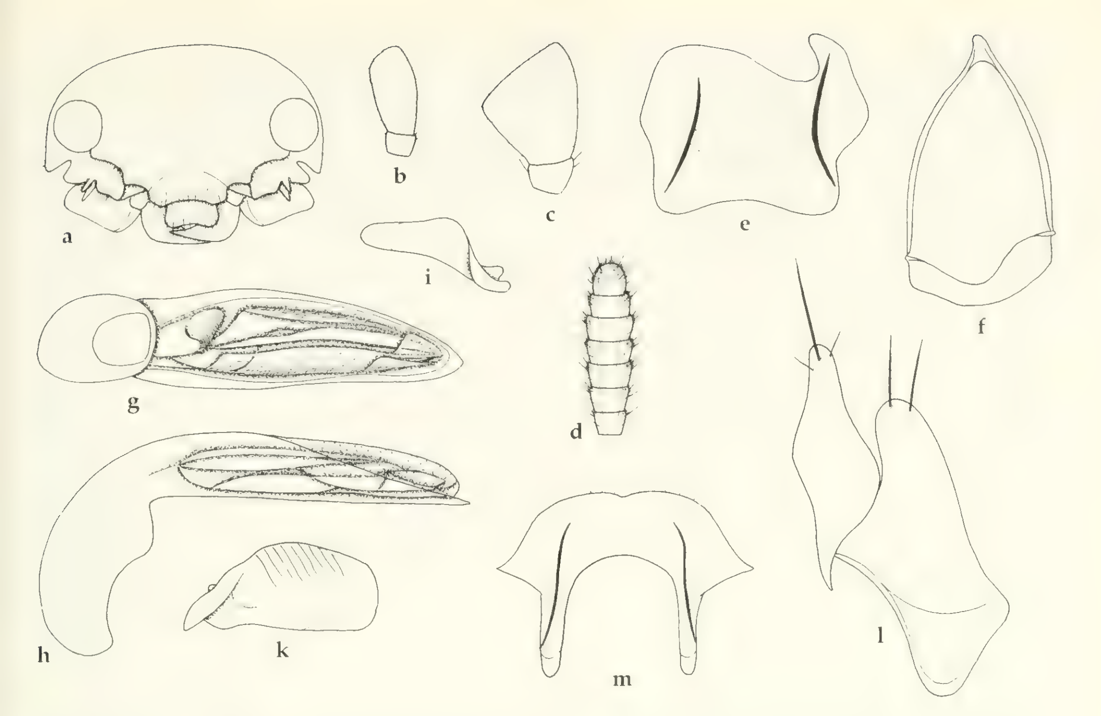
Diagnosis. Distinguished from *A. ipsoides occidentalis*, subspec. nov. by comparatively longer elytra, less coarse puncturation of pronotum, less concave clypeus, widely rounded anterior angle of subocular plate, narrower and less convex genital ring, longer aedeagus, and obliquely transverse apex of left paramere.

Description

Measurements. Length: 5.6-7.8 mm. Ratios. Width/length of pronotum: 1.69-1.80; width pronotum/head: 1.73-1.82; length/width of elytra: 1.47-1.57; length elytra/pronotum: 2.58-2.81.

Colour. Reddish-piceous to piceous, in dark specimens all margins of pronotum and lateral margins of elytra rather widely reddish. Lower surface dark reddish, posterior abdominal sterna in middle darker. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 238, 240a-d). Rather short, fairly wide, frons faintly convex. Eyes comparatively small. Lateral border of head irregular, somewhat sinuate, without distinct ridge. Suborbital cavity rather



Figs 240a-m. *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood). Details of head and genitalia. For legends see fig. 239.

deep, suborbital lamina anteriorly square, then deeply incised, behind this incision with acute, tooth-like process, inner wall of cavity smooth. Clypeal suture only laterally distinct, in middle widely interrupted. Clypeus basally not concave, only at apex slightly impressed, margin concave, along border and on surface with several elongate setae. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate and some short setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex acute to slightly obtuse. Wings of mentum very narrow and elongate, apex acute. Glossa narrow, elongate, apically square, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus elongate, parallel. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border straight, angles widely rounded. Antenna moderately elongate, in middle faintly widened, 7th-8th antennomeres c. 1.6-1.7 × as wide as long. Microreticulation distinct, puncturation dense and moderately coarse, rugose, punctures deeply impressed. Surface shortly pilose, very dull, highly coriaceous. Lateral border of head and lateral border of suborbital lamina with elongate setae, behind suborbital ridge with a small tuft of elongate hairs, ventral surface of maxillary plate shortly and sparsely pilose. Gula impilose.

Pronotum (Figs 417, 570). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base slightly wider than apex, though widest about in middle. Apex in middle excised, though convex, slightly produced near eyes, laterally oblique, barely concave. Apical angles almost evenly rounded off. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded, markedly produced posteriorly. Base in middle markedly convex, near basal angles deeply concave, not bordered. Surface near base in middle and laterally with shallow, irregular impressions. Lateral margin on and below border with a dense fringe of elongate setae. Microreticulation present on disk, very fine, rather superficially, isodiametric, absent on marginal explanation, puncturation very coarse, dense, near base and on lateral explanation sparse, punctures deeply impressed, with sharp margins. Surface with irregular, vermicular rugosities, impilose, rather dull, somewhat coriaceous.

Elytra (Figs 70, 417, 569). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders distinctly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on and below border a dense fringe of with elongate setae. Series of umbilical pores consisting of c. 6, sometimes up to 10 irregularly arranged pores behind shoulder. Setae rather elongate. Pores, hovewever, very difficult to see when setae are broken. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow furrows and slight ridges. Microreticulation distinct, though very fine, isodiametric, puncturation extremely coarse, even much coarser than on pronotum, moderately sparse, less coarse near scutellum, at apex, and laterally. Punctures deeply impressed with sharp margins. Shoulders more or less widely impunctate, also laterally and at apex puncturation very sparse. Surface impilose, moderately dull.

Lower surface. Prosternal process rather short, carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, slightly >2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia rather short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 240e-k). Genital ring moderately wide, rather triangular, faintly asymmetric, with rather short apex, with large, asymmetric, deeply excised base. Sternum VII narrow, apically obliquely convex, with very deep excision, base concave, basal angles rounded, lateral parts rather short. Aedeagus elongate, depressed, in middle barely widened, barely asymmetric. Basal part long, markedly bent. Lower surface straight. Apex rather narrow, obtusely rounded, almost symmetric, on right side not excised. Orifice rather elongate, internal sac moderately complex. Right paramere elongate, tapering, with rounded apex, left paramere considerably larger than right, square, with oblique-transverse apex, markedly striped.

♀ genitalia (Figs 240l,m). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere rather narrow, with attenuate, rounded apex, median border slightly concave, lateral border gently convex, apex with 1 very elongate and 0-3 shorter apical setae. Lateral plate very elongate, with 2-4 elongate apical setae.

Variation. Some variation noted in size, relative width of pronotum and elytra, density of puncturation on elytra, and shape of stylomere.

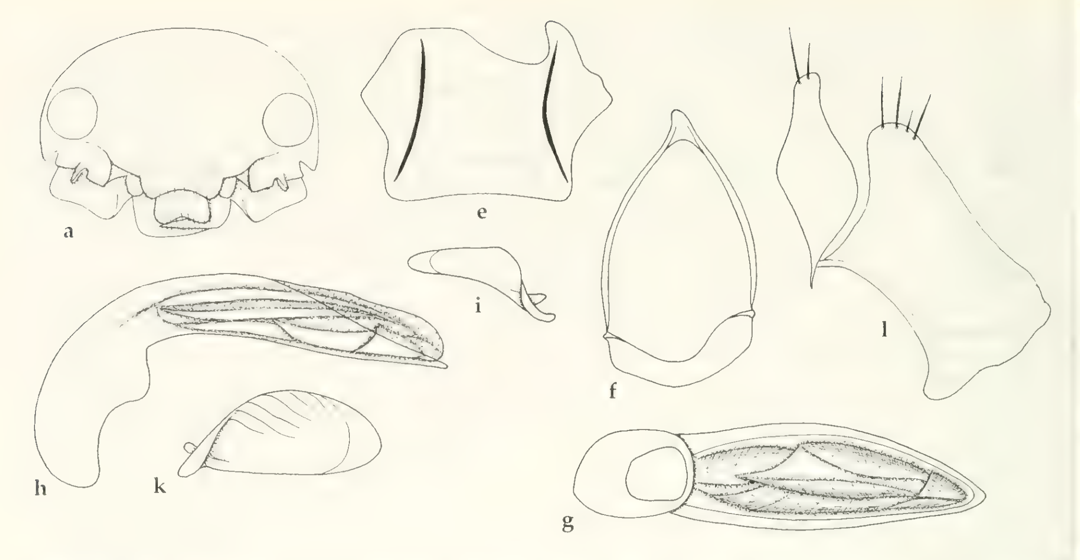
Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Some specimens mounted with ants of the genera *Iridomyrmex* Mayr and *Formica* L. on same card. Dated specimens captured from October to March, and in June and July, though very few specimens dated.

Distribution (Fig. 648). Eastern part of South Australia, Victoria, Australian Capital Territory, eastern New South Wales, southeastern Queensland; ? Tasmania. The latter record refers to 4 undated specimens labelled simply "Tasmania" and is highly doubtful.

Material examined (274). **SA:** 1♀, Pt. Lincoln, det. *ipsoides* (BMNH); 1♀, Type H. T., A. H. Davis Adelaide, *Adelotopus* Hope *ipsoides* ~~Newm~~ West, lectotype! (BMNH); 1♂, Cotype, A. H. Davis Adelaide, Ent. Club 44-12., *Adel.* ~~*Dytiscides*~~ *ipsoides* var. Newm. Entomol 365., paralectotype! (BMNH); 1♀, Coll. Hope Oxon., A. H. Davis Adelaide, Type *Adelotopus ipsoides* Westw. Type Col: 21 *Adelotopus ipsoides* Westw., paralectotype! (OUM); 1♂, Adelaide, Coll. Carl Schuchardt, A. H. Davis, det. *ipsoides* (SMF); 1♂, Adelaide, Coll. C. Felsche, det *ipsoides* (SMTD); 1♀, 1 (sex?), Hist.-Coll. Nr. 42153 Adelaide Coll. Germar. det *ipsoides* (MNHB); 1♀, 42153, Adelaide Coll. erm., det *ipsoides* (MNHB); 1♂, *Adelotopus ipsoides* WW.[d], Adelaide, 332 (OUM); 1♂, Adelaide, *Adelotopus ipsoides* Hope, Coll. Schaum, det *ipsoides* (DEIB); 2♀♀, Adelaide, Coll. Schaum, det *ipsoides* (DEIB); 1♂, Adelaide Lea (SAMA); 1♀, Adelaide (OUM); 1♀, Adelaide Schomb. 41407, *ipsoides* Hope, Port Philipp (MNHB); 1♀, Adelaid. 1871 (NHMW); 3♂♂, Adelaide Coll. Castelnau, *Ipsoides* Adelaide (MCSN); 3♂♂, 4♀♀, Adelaide Coll. Castelnau, det. *ipsoides* (MCSN); 1♀, Adel.[e] Tarrier, *ipsoides* W.[d], Soc. Ent. Belg. Coll. PUTZEYS, *Adelotopus ipsoides* Westw. dét. J. Putzeys (IRSNB); 1♂, 1♀, Ardrossan, J. G. O. Tepper, 19162 *Adelotopus creberrimus* Bl. (SAMA); 3♂♂, 5♀, Yorketown, CNHM 1955 Karl Brancsik ex Eduard Knirsch (FMNH, UASM); 1♀, Yorketown, CNHM 1955 Karl Brancsik ex Eduard Knirsch, *Cainogenion ipsoides* Westw. det. G. E. Ball 1987 (UASM); 1, Yorketown, Brncsk, A. Fenyes Collection, det *ipsoides* (CAS); 2♂♂, Quorn A. H. Elston, A. H. Elston Collection, 872

Ad. creberrimus Bl. Id. by A. M. Lea (AMS); 4♂♂, Nat. Mus. Victoria, det. *ipsoides* (NMV); 1♂, C 73, *Adelotopus creberrimus* (SAMA). – **Vic:** 3♂♂, Echuca 14.XII.1966, leg. Bornemissza (HNMB); 1♂, 1♀, Ballarat, C. Oke, *Cainogenion ipsoides* Westw. (NMV); 2♂♂, Bacchus Marsh XII.1904, F. L. Billingshurst, 106, det. *ipsoides* (CAS); 1♀, Bacchus Marsh XII.1904, Van Dyke Collection, *Cainogenion ipsoides* Westwood (CAS); 1♂, 4♀♀, Bacchus Marsh XII.1904, Van Dyke Collection, det. *ipsoides* (CAS); 2♀♀, Bacchus Marsh, CNHM 1955 Karl Brancsik ex Eduard Knirsch (FMNH); 1♀, Bacchus Marsh XII., Samml. O. Langenhan 1931, det. *gyrinoides* (SMTD); 2♀♀, Bacchus Marsh Dist., *Adelotopus ipsoides* West. (NMV); 1♀, Geelong, H. W. Davey, 3894 *Adelotopus ipsoides* Westw. (SAMA); 1♀, Melbourne No 665 Ejnar Fischer, *Adelotopus ipsoides* Westw. (NHRS); 1♂, *Adelotopus ipsoides* West. Melbourne, From O. Howitt (NMV); 1♀, Melbourne, Coll. Carl Schuchardt, det *ipsoides* (SMF); 1♀, Melbourne, *Ipsoides* Newm. (BMNH); 1♀, Melbourne, Ex Musaeo H. W. Bates (MNHN); 1 (sex?), Melbourne, Ex Musaeo Chaudoir, det. *ipsoides* Westwood (MNHN); 1♂, *ipsoides* Westw. Melbourne, Ex Musaeo Mniszech (MNHN); 1♀, Melbourne Coll. Castelnau, *ipsoides* West.Melb. (MCSN); 1♀, Melbourne Coll. Castelnau, *ipsoides* West. Melbourne (MCSN); 2♀♀, Melbourne Coll. Castelnau, confusi da Cast. col *dytiscoid.*, det. *ipsoides* (MCSN); 2♂♂, 3♀♀, Melbourne Coll. Castelnau, det. *ipsoides* (MCSN); 1♀, Hist.-Coll. Nr. 39439 Pt. Philipp, Coulon, det *ipsoides* (MNHB); 1♂, P. Phil. Cutters, *Ipsoides* Wst. (OUM); 2♂♂, Heathmont J. E. Dixon, det *ipsoides* (NMV); 2♂♂, Warburton ditto J. E. Dixon, det *ipsoides* (CBM); 1♂, 1♀, Warburton 1920 C. Oke, *Cainogenion ipsoides* Westw. (NMV); 1♀, Eltham, F. E. Wilson 16.II.18, F. E. Wilson Collection, *Adelotopus ipsoides* Westw. Id. by T. G. Sloane (NMV); 2♂♂, 1♀, Eltham J. E. Dixon, *Adelotopus dytiscoides* (NMV); 1♂, 1♀, Alexandra, CNHM 1955 Karl Brancsik ex Eduard Knirsch (FMNH, UASM); 2♂♂, 1♀, Whiteas (?) XI.42, M. 243, J. G. Brooks Bequest (ANIC); 1♂, Inglewood XI.51 FEW, J. G. Brooks Bequest (ANIC); 1♂, 1♀, Inglewood Xms 1916 J. E. Dixon (NMV); 1♂, Inglewood 14.XII.16 (NMV); 1♂, Melton X.52 FEW, J. G. Brooks Bequest (ANIC); 2♂♂, 1♀, Melton, F. E. Wilson 26.XII.52, F. E. Wilson Coll., det *ipsoides* (NMV); 1♂, 2♀♀, Melton, 27.XII.48 (NMV); 1♂, 1♀, Broadmeadow 27.I.13, *Adelotopus ipsoides* Westw. (NMV); 1♂, Broadmeadow 18.VI.(?)21 F.R.S. (NMV); 2♀♀, Broadmeadow Coll. 7P6, 1.VII.39, J. C. Goudie Collection (NMV); 1♂, Kerang, 3.XII.1946 R.E.T. (CBM); 1♀, Wannon, I.51 B. Given, F. E. Wilson Collection, det *ipsoides* (NMV); 1♂, *Adelotopus ipsoides* West. (OUM); 3♂♂, Henle, Coll. V. Schönfeldt, *eucalypticola* (SMF); 1♂, Ex Museo Van Lansberge (MNHN); 1♂, 1♀, Fruhstorfer, Coll. B. Schwarzer, det. *ipsoides* (SMF); 1♀, Fruhstorfer, Coll. Kraatz, *Adelotopus ipsoides* Westw. Id. T. G. Sloane, *Cainogenion ipsoides* West. (DEIB); 1♂, Collect. Plason, *ipsoides* Westw. (NHMW); 1♂, Gehr. W. Müller, det *ipsoides* (SMTD); 1♂, Fruhstorfer, Coll. Kraatz, *ipsoides* Westw., Sloane det. (DEIB); 1 (sex?), 13471, Edwards, Fry Coll., det *ipsoides* (BMNH); 3♂♂, 1♀, Edwards, Fry Coll., det *ipsoides* (BMNH); 1 (sex?), *Adelotopus ipsoides* Lin. Soc. Westw., 19, Howitt Colln. (NMV); 1♂, 3♀♀, 2594, det *ipsoides* (AMNH); 1♂, 3♀♀, CNHM 1955 Karl Brancsik ex Eduard Knirsch (FMNH, UASM); 1♀, *Adelotopus ipsoides* Westw. (NMV); 1♀, *dytiscoides* Newm., det *ipsoides* (MNHB); 4♂♂, 10♀♀, det *ipsoides* (CBM, MNHB); 1♀, Le Moult vent. via Reinbek (Hamburg); 1♂, det. *obscurus* (MNHB); 1♀, Edwards, Vict. Fry Coll. 1905, *Cainogenion ipsoides* Westw. (FMT); 1♀, *Adelotophus* (sic!) *ipsoides* Westw. (OUM); 1♂ (NMV). – **Tas:** 2♂♂, 2♀♀, 1916 26, det *ipsoides* (SMTD). – **ACT:** 1♂, Canberra 16.XII.1928 M. Fuller (ANIC); 1♀, Canberra 7.XII.1931 WMN, Harvard Exp. Darlington, det *ipsoides* (MCZ); 1♂, Black Mt. 29.XI.29 G. F. Hill (ANIC). – **NSW:** 1♀, Mt. Jerrabombera nr. Quanbeyan 30.XI.1969 K. Pullen, Kim Pullen Collection (ANIC); 1♀, "Calosoma" via Gundaroo 8.III.87 B. P. Moore, *Cainogenion ipsoides* Westw. det. B. P. Moore '87 (CMC); 1♀, Yass, 25.XI.1946 C. Oke (NMV); 1♀, Blackheath 2.XII.1946 C. Oke, det *ipsoides* (NMV); 1♂, *Adelotopus obscurus* 2093 Mulwala (NMV); 1♂, 1♀, Clarence River Coll. Castelnau, Clarence Riv., det. *ipsoides* (MCSN); 1♂, Janson Acq. (MNHN); 2♂♂ (OUM). – **Qld:** 1♀, Gayndah, *Adelotopus subopacus* Macleay Gayndah (NMV); 1♀, Coll. L. W. Schaufuss, *ipsoides* Westw., *Adelotopus* sp. (MNHB); 1♂, Lane S. Rolle V., det *ipsoides* (MNHB); 1♀, *ipsoides* Westw. (ANIC); 1♂, Janson Acq. (MNHN). – **Aus:** 1♀, North N. Holl. Damel., Janson Acq. (MNHN); 1♂, *Ipsoides* Westw. 1.99.9, Muir Coll (OUM); 1♂, 666, 135, Sharp Coll, det *ipsoides* (BMNH); 1♂, W. Edwards, Museum Leiden ex. collection C. J. Louwerens rec. 1979, *Cainogenion ipsoides* Westw. det. Darlington '48 (NNML); 1♂, W. Edwards, *Cainogenion ipsoides* Westw. det. Darlington, J. G. Brooks Bequest (ANIC); 2♂♂, 2♀♀, W. Edwards, det *ipsoides* (MCZ); 1♂, Edwards, det *ipsoides* (MCZ); 1♂, W. Edwards *ipsoides* W. (MCZ); 1♂, *Adelotopus ipsoides*, W. Edwards (MCZ); 1 (sex?), W. Edwards, *Cainogenion ipsoides* Westw. (MCZ); 1♂, 1213, det *ipsoides* (MCZ); 2♂♂, Collect. Plason, det. *ipsoides* (NHMW); 1♀, 1 (sex?), Mc Coy (NHMW); 1♂, 1♀, Coll. E. Witte, det *ipsoides* (SMF); 1♀, Blackb's Coll, A 135, *ipsoides* Westw., 7134 *Adelotopus ipsoides* Westw. (SAMA); 1♂, CNHM 1955 Karl Brancsik ex Eduard Knirsch, *Adelotopus dytiscoides* Newm., *Cainogenion ipsoides* West. det. G. E. Ball 1987 (FMNH); 1♀, CNHM 1955 Karl Brancsik ex Eduard Knirsch, *Cainogenion ipsoides* Westw. (FMNH); 1♀, Coll. Carl Schuchardt, *Ipsoides* (SMF); 1♀, 43 bis *Adelotopus Ipsoides* Westw. (OUM); 1♀, 73.6., det *ipsoides* (BMNH); 1♀, *Adelotopus ipsoides* (BMNH); 1♂, *A. ipsoides* Westw. (ZSM); 1♀, 43 *Adelotopus obscurus* Cast. (OUM); 1♀, *Adelotopus ipsoides* Westw. dét... (IRSNB); 2♀♀, det *ipsoides* (MNHB); 1♂, *Adelotopus obscurus* Cast. (OUM); 1♀, Coll. French (ANIC); 1♂, F. Walker 1868 (OUM); 1♀, Ex French, G. C. Champion Coll. (BMNH); 1♂, det *ipsoides* (BMNH). – **?:** 1♂, 1♀, *Ipsoides* Goulburn Riv. (OUM); 1♂, Goul., 39.439, det *ipsoides* (MNHB); 1 (sex?), Mar. Plns 24.XI.93, ?, *Adelotopus ipsoides* Westw. Id. by T. G. Sloane (ANIC); 1♀, Coll. Hacker, Wolfram Camp X.04, *Adelotopus ipsoides* Westw. Id. by T. G. Sloane (DEIB); 1♂, 41407, det *ipsoides* (MNHB); 1♂, Ultima J. C. Goudie, J. C. Goudie Collection (NMV); 1♀, Albany ? (OUM); 2♂♂, 4♀♀, 21-26, Howitt Colln., det *ipsoides* (NMV); 1♂, 57, Howitt Colln. (NMV); 1♀, 129, 20, Howitt Colln, det *ipsoides* (NMV); 1♂, Fry Coll.,



Figs 241a, e-l. *Cainogenion* (s. str.) *ipsoides occidentale*, subspec. nov. Details of head and genitalia. For legends see fig. 239.

det *ipsoides* (BMNH); 1♂, K 12231, *A. ipsoides* (AMS); 1♀, *obscurum* Cast., 267 (OUM); 8♂♂, 2♀♀, Ex Musaeo Chaudoir, det. *ipsoides* Westwood (MNHN); 1♀, Ex Musaeo Mniszech, det. *ipsoides* Westwood (MNHN); 1♀, Collect. Plason, det *ipsoides* (NHMW); 1♀, Collect. Plason, det. *gyrinoides* (NHMW); 1♀, Fundort ?, Coll. B. Schwarzer, det *ipsoides* (SMF); 2♀♀, *Cainogenion ipsoides* Westw. (NMV); 1♂, W..(?) (OUM); 1♀, 1961 (NMV); 1♀, 199.9, Muir Coll. (OUM); 1♂, 119 (ANIC); 6♂♂, 6♀♀ (NMV); 1♀ (ANIC).

Cainogenion ipsoides occidentale, subspec. nov.

Figs 241, 418, 571, 572, 648

Types. Holotype: ♂, Swan River, Janson Acq. 1884 (MNHN). – Paratypes: 2♀♀, same data (MNHN); 1♀, N. Holl. Kg. Geo. Sound, Janson Acq. 1884 (MNHN); 1♀, Australien, WA 110, Treenbrook Forest, 5 km nw. Pemberton, 2.-3.12.1987, M. Baehr (CBM); 1♂, S.W.A. 21.11.69, Soc. Ent. Belg. Coll. PUTZEYS, *Adelotopus ipsoides* Westw. dét. J. Putzeys (IRSNB).

Diagnosis. Distinguished from nominate subspecies by comparatively shorter elytra, coarser puncturation of pronotum, more concave clypeus, acute or at least angulate anterior angle of subocular plate, wider and more convex genital ring, shorter aedeagus, and evenly rounded apex of left paramere.

Description

Measurements. Length: 5.8-7.1 mm. Ratios. Width/length of pronotum: 1.68-1.86; width pronotum/head: 1.75-1.91; length/width of elytra: 1.45-1.54; length elytra/pronotum: 2.48-2.70.

Colour. Generally similar to nominate subspecies, though usually lateral margins of pronotum more widely light, hence dark centre more contrasting.

Head (Fig. 241a). Rather similar to nominate subspecies, though clypeus slightly more concave on surface and subocular plate with acute to at least angular anterior angle.

Pronotum (Fig. 418, 572). Similar to nominate subspecies, though puncturation of surface considerably coarser and less dense, punctures spaced and very deeply impressed, hence surface less rugose.

Elytra (Figs 418, 571). Similar to nominate subspecies, though elytra relatively shorter and wider, puncturation slightly coarser, and shoulders and base even more extensively impunctate.

Lower surface. Similar to nominate subspecies.

Legs. Similar to nominate subspecies.

♂ genitalia (Figs 241e-k). Similar to nominate subspecies, though genital ring slightly wider and

more convex, aedeagus slightly shorter, and left paramere less square and with evenly rounded apex.

♀ genitalia (Figs 241l). Very similar to nominate subspecies.

Variation. Some variation noted in distinctness of pronotal pattern, relative shape of pronotum and elytra, and density, rugosity, and distinctness of puncturation of surface of head.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. A specimen collected by me under bark of Karri eucalypt. Dated specimens captured in November and December.

Distribution (Fig. 648). Southern part of southwestern Australia.

Material examined (6). Only the type series.

Etymology. The name refers to the distribution in southwestern Australia.

Cainogenion creberrimum (Blackburn, 1901)

This species ocurrs in two slightly different subspecies, one occurring in eastern South Australia, western Victoria, southern and eastern inland New South Wales, the other being restricted to the northwestern corner of New South Wales.

Diagnosis. Rather large, moderately wide, uniformly piceous species with a fringe of elongate setae on the margins, though with impilose surfaces of pronotum and elytra, barely concave surface of clypeus, distinct microreticulation of surface, and rather short and fairly wide, symmetric aedeagus with acute apex. Further distinguished from *C. ipsoides* (Westwood) by not concave apex of clypeus, distinctly carinate lateral margin of head, markedly concave lateral parts of apical margin of pronotum, punctate shoulders, generally denser puncturation of surface, shorter, wider aedeagus, and wider stylomere.

Cainogenion creberrimum creberrimum (Blackburn, 1901)

Figs 242, 419, 573, 574, 649

Adelotopus creberrimus Blackburn, 1901, p. 19.

Cainogenion creberrimum, Notman 1925, p. 11, 30; Csiki 1933, p. 1636; Matthews 1980, p. 10; Moore et al. 1987, p. 53.

Types. Lectotype (by present designation): ♀, Type, 2707 Lyndhurst T., Blackburn Coll. 1910-236., *Adelotopus creberrimus* Blackb., det. *ipsoides* (BMNH). – Paralectotype: 1♀, 2707 LC, *Adelotopus creberrimus*, Bl. Co-type, S. 7130 *Adelotopus creberrimus* Bl. S. Australia Type (SAMA).

Type locality: From label: "Lyndhurst", from description: "Basin of Lake Eyre", both South Australia.

Diagnosis. Distinguished from *C. creberrimum gnaltae*, subspec. nov. by less strongly ridged but slightly pilose lateral margin of head, not distinctly carinate prosternal process, denser puncturation of head, and usually sparser puncturation on shoulders of elytra.

Description

Measurements. Length: 5.2-7.5 mm. Ratios. Width/length of pronotum: 1.68-1.88; width pronotum/head: 1.67-1.80; length/width of elytra: 1.48-1.55; length elytra/pronotum: 2.47-2.80.

Colour. Reddish-piceous to piceous, sometimes centre of elytra slightly lighter, in dark specimens all margins of pronotum and lateral margins of elytra rather widely reddish. Lower surface dark reddish, posterior abdominal sterna in middle slightly darker. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 242a-d). Rather short, fairly wide, frons faintly convex. Eyes comparatively large. Lateral border of head regular, straight or almost straight, with distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with obtuse or rounded anterior border, then deeply incised, behind this incision with acute, tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus barely concave, margin laterally oblique, in middle straight, though

slightly irregular, along border with several elongate setae in two tufts. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate and some short setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex slightly obtuse. Wings of mentum narrow and elongate, apex slightly obtuse. Glossa rather narrow, elongate, apically almost square, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather short, in middle slightly widened. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border slightly concave, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.8-1.9 × as wide as long. Microreticulation present, though difficult to detect, because puncturation extremely dense, rather coarse, very rugose, punctures deeply impressed and very closely packed. Surface shortly pilose, very dull, extremely coriaceous. Lateral border of head and lateral border of suborbital lamina with more or less sparse, usually rather short setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate shortly and sparsely pilose. Gula impilose.

Pronotum (Figs 419, 574). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base slightly wider than apex, though widest about in middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, distinctly concave. Apical angles obtuse, not fully rounded off. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded, markedly produced posteriorly. Base in middle markedly convex, near basal angles deeply concave, not bordered. Surface near base in middle and laterally with shallow, irregular impressions. Lateral margin on and below border with a dense fringe of elongate setae. Microreticulation present on disk, though very fine, rather superficial, difficult to detect, isodiametric, absent on marginal explanation, puncturation very coarse, extremely dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, very densely packed. Surface with irregular, vermicular rugosities, impilose, dull, highly coriaceous.

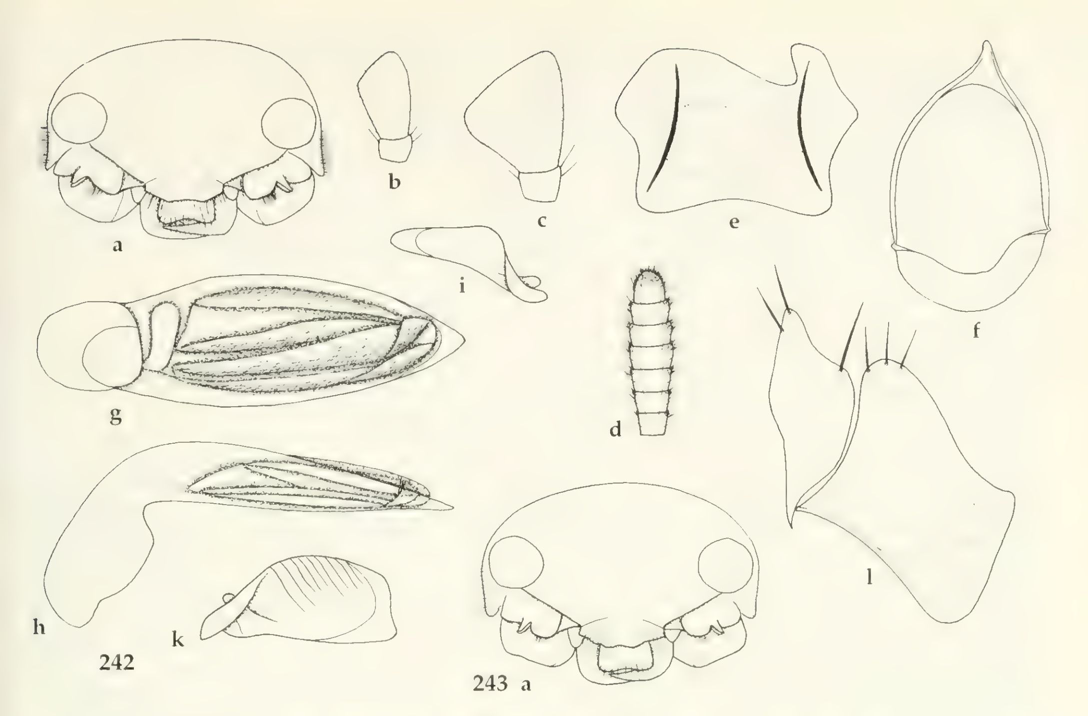
Elytra (Figs 419, 573). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders distinctly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on and below border with a dense fringe of elongate setae. Series of umbilical pores consisting of c. 4-6 rather spaced pores behind shoulder. Setae rather elongate. Pores, hovewever, extremely difficult to detect when setae are broken. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow furrows and slight ridges. Microreticulation distinct, though very fine, isodiametric, puncturation extremely coarse, even much coarser than on pronotum, dense, less coarse near scutellum, at apex, and laterally. Punctures punctures slightly elongate, deeply impressed with sharp margins. Shoulders more or less extensively punctate. Apex and lateral part rather densely punctate. Surface impilose, fairly dull.

Lower surface. Prosternal process rather short, convex, barely carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, slightly >2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia rather short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 242e-k). Genital ring rather wide, convex, barely asymmetric, with rather short apex, large, feebly asymmetric, deeply excised base. Sternum VII narrow, apically obliquely convex, with very deep excision, base concave, basal angles rounded, lateral parts rather short. Aedeagus moderately elongate, depressed, in middle rather widened, alsmost symmetric. Basal part long, markedly bent. Lower surface straight. Apex narrow, acute, symmetric. Orifice rather elongate, internal sac moderately complex. Right paramere elongate, tapering, with rounded apex, left paramere considerably larger than right, square, with oblique-transverse apex, markedly striped.

♀ genitalia (Fig. 242l). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere moderately wide, with attenuate, rounded apex, median border slightly concave, lateral border more or less markedly convex, apex with 2-3 elongate apical setae and sometimes with 1-2 elongate setae far laterally. Lateral plate very elongate, with 2-4 elongate apical setae.



Figs 242a-l. *Cainogenion* (s. str.) *creberrimum creberrimum* (Blackburn). Details of head and genitalia. For legends see fig. 239.
Fig. 243a. *Cainogenion* (s. str.) *creberrimum gnaltae*, subspec. nov. Frontal view of head.

Variation. Some variation of size, relative shape of pronotum and elytra, puncturation, pilosity, and shape of stylomere noted. There is also some regional variation, because specimens from northern South Australia have a generally denser puncturation of elytra with almost completely punctate shoulders.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens have been collected "under bark *Euc. camald*". Dated specimens caught from October to February, in June, and in August.

Distribution (Fig. 649). Eastern part of South Australia, western Victoria, southern and inland southeastern New South Wales.

Material examined (55). **SA:** 1♀, Adelaide, VI.1930 C. Oke, *Cainogenion creberrimum* Bl. (NMV); 2♂♂, 2707 Pet., Peterburg, Blackb's Coll., *creberrima*, Blackb. (SAMA); 4♂♂, 4♀♀, Parachilna Gorge 29.XI.1951 G. F. Gross, E.S.I.1444, E.S.I.3390 (CBM, SAMA); 1♀, 2707 T Lyndhurst, *Adelotopus creberrimus* Blackb., lectotype! (BMNH); 9♂♂, 5♀♀, nr. Arkaroola homestead 29.X.1969 G. F. Gross (CBM, SAMA); 1♂, 10 mi N.W. Arkaroola H. S. 29.X.69 N. McF (SAMA); 1♀, Beltana 30.XI.87 Greenmount (?), ac 23246, *Adelotopus creberrimus* Bl. Id. by A. M. Lea, det. *obscurum* (AMNH); 1♀, Grenwell Ck Rd. to Leigh Creek, Flinders Ranges 20.VIII.1967 G. F. Gross (SAMA); 1♂, Qwieandana N. Flinders Ra., Hale & Tindale (SAMA); 2♂♂, 5♀♀, Mt. Serle N. Flinders Ra, Hale & Tindale (SAMA); 1♀, Merna Merna 15.II.1949, G. F. Gross (SAMA); 2♂♂, Gum Crks bet. Merna Merna and Commodore 25.X.1966, G. F. Gross (SAMA); 1♀, 2707 LC, *Adelotopus creberrimus*, Bl. Co-type, *Adelotopus creberrima* Bl., paralectotype! (SAMA); 1♂, 1♀, C. French's Coll., *Adelotopus creberrimus* Bl. (NMV). – **Vic:** 1♂, Portland, I.1937, C. Oke, *Cainogenion creberrimum* Bl. (NMV). – **NSW:** 1♂, 1♀, Deniliquin, 4.XII.1973, A. & M. Walford-Huggins, 8233, *Cainogenion onscurum* Cast. det. B. P. Moore'74 (CMC); 1♂, 1 (sex?), Deniliquin, 4.XII.1973, A. & M. Walford-Huggins, *Cainogenion obscurum* (Castelnau) [Series det by A. Walford-Huggins] (CMP-WHC); 2♀♀, Woodhart Jerilderie T.G.S. 26.XII.16 (?) (ANIC); 1♀, Bathurst, Griffith Colln. Id. by A. M. Lea (SAMA); 1♀, Walgett nr. Quirindi, G. F. Bryant 2.XI.08, G. Bryant Coll., det. *ipsoides* (BMNH); 2♀♀, Mudgee HJC. XI.35 (BMNH). – **Aus:** 1♀, Tarnier (NHRS).

Cainogenion creberrimum gnaltae, subspec. nov.

Figs 243, 420, 575, 576, 649

Types. Holotype: ♂, N.S.W. Gnalta Stn. 257.5 km N. Broken Hill. 8 Dec.1964, AN McFarland (SAMA). – Paratypes: 10♀♀, same data (CBM, SAMA); 1♀, 31.05 S 141.42 E, Fowlers Gap Res. Stn. NSW 8-9 Dec.1982 I. D. Naumann (ANIC).

Diagnosis. Distinguished from nominate subspecies by very strongly ridged but impilose lateral margin of head, distinctly carinate prosternal process, less dense, but coarser puncturation of head, and dense puncturation on shoulders of elytra.

Description

Measurements. Length: 6.05-7.5 mm. Ratios. Width/length of pronotum: 1.69-1.76; width pronotum/head: 1.70-1.80; length/width of elytra: 1.49-1.54; length elytra/pronotum: 2.58-2.70.

Colour. Rather similar to nominate subspecies, but generally slightly darker, piceous.

Head (Fig. 243a). Fairly similar to nominate subspecies, but with following differences: Lateral border of head straight and with very distinct ridge, without any setae along border. Clypeus even more irregular, laterally more projecting. Suborbital lamina anteriorly mor distinctly angulate, with very feebly pilosity. Lateral plate of maxilla with slightly convex rather than concave lateral margin. Puncturation of surface coarser and less dense, therefore microreticulation usually more distinct. Pilosity of surface very short and sparse.

Pronotum (Figs 420, 576). Similar to nominate subspecies, though apex near eyes sometimes even more produced.

Elytra (Figs 420, 575). Similar to nominate subspecies, though shoulders and the base always completely and as densely punctate as disk.

Lower surface. Very similar to nominate subspecies, though prosternal process distinctly carinate.

Legs. Similar to nominate subspecies.

♂ genitalia. Similar to nominate subspecies

♀ genitalia. Rather similar to nominate subspecies, though stylomere laterally less convex.

Variation. Very little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Unknown. So far captured in December only.

Distribution (Fig. 649). Northwestern corner of New South Wales.

Material examined (12). Only the type series.

Etymology. The name refers to the type locality, Gnalta Station.

Cainogenion rotundicolle, spec. nov.

Figs 244, 421, 577, 578, 649

Types. Holotype: ♀, Mullewa W. A. Sept. 20 1981, Wheeler, *Cainogenion cylindricum* Chd.? (MCZ).

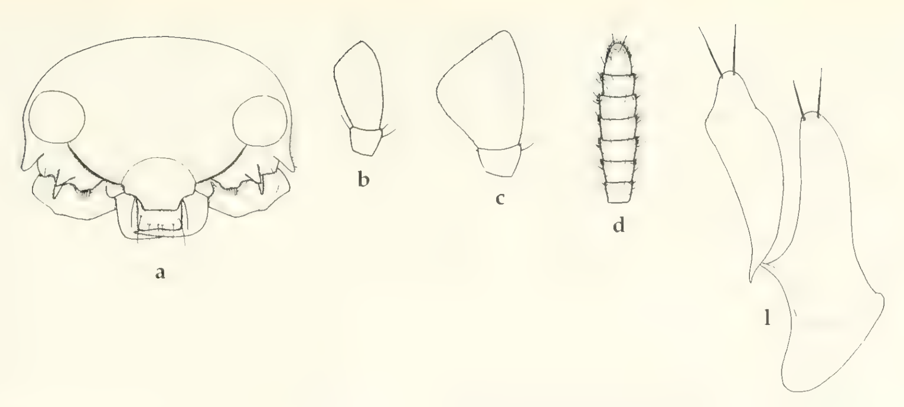
Diagnosis. Rather large, moderately wide, uniformly reddish-piceous species with a fringe of setae on the margins, though with impilose surfaces of pronotum and elytra, barely concave surface of clypeus, indistinct microreticulation of surface, but very dense and coriaceous puncturation, and weakly divided stylomere. Further distinguished from all other species by rectangular apical angles and widely rounded basal angles of pronotum.

Description

Measurements. Length: 6.3 mm. Ratios. Width/length of pronotum: 1.72; width pronotum/head: 1.61; length/width of elytra: 1.43; length elytra/pronotum: 2.51.

Colour. Uniformly reddish-piceous, margins of pronotum and elytra not lighter. Lower surface reddish, posterior abdominal sterna in middle slightly darker. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 244a-d). Rather short, comparatively very wide, frons rather convex. Eyes compara-



Figs 244a-d, l. *Cainogenion* (s. str.) *rotundicolle*, spec. nov. Details of head and genitalia. For legends see fig. 239.

tively large. Lateral border of head regular, convex, with very sharp, somewhat upturned ridge. Suborbital cavity rather deep, suborbital lamina anteriorly about square with rounded anterior border, then deeply incised, behind this incision with two acute, tooth-like processes, inner wall of cavity smooth. Below suborbital lamina with an elongate, acute spine that surpasses the lateral margin of the lamina. Clypeal suture complete, semicircular. Clypeus not concave, margin laterally strongly oblique, excised laterally of median part, the latter produced and anteriorly straight, without setae along border, but with a single seta on either side in lateral scrobe of clypeus. Labrum separated from clypeus by very deep furrow, strongly overlapped by median part of clypeus, directed obliquely anterior-ventrally, rather small and elongate, apex almost straight, with 6 elongate setae. Antennal groove short and very deep, situated far posteriorly, laterally and posteriorly sharply bordered. Mental tooth fairly large, triangular, apex acute. Wings of mentum short and wide, triagonal, apex very acute. Glossa damaged, perhaps rather wide, number of setae not known. Paraglossae unknown. Terminal palpomere of maxillary palpus rather elongate and parallel, in middle not widened. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lateral plate of maxilla very large and thick, lateral border irregularly convex, in posterior half with an oblique dorsal ridge, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.6 × as wide as long. Microreticulation barely visible, because puncturation extremely dense and rugose, moderately coarse, even punctures partly not easily recognizable. Surface impilose, moderately dull, extremely coriaceous. Lateral border of head without setae, lateral border of suborbital lamina in anterior half with a tuft of hairs below margin, behind suborbital ridge with a large area covered with dense, moderately elongate setae, ventral surface of maxillary plate impilose. Gula impilose.

Pronotum (Figs 421, 578). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base only slightly wider than apex, though widest about in middle. Apex in middle excised, though convex, rather strongly produced near eyes, there with evenly rounded projection, laterally oblique, deeply concave. Apical angles rectangular, projecting. Apex not bordered. Sides behind apical angles slightly concave, then evenly convex, unbordered. Basal angles even rounded off, barely produced posteriorly. Base in middle moderately convex, near basal angles faintly concave, not bordered. Surface near base in middle and laterally with shallow, irregular impressions. Lateral margin on border with rather short setae, below border with more elongate setae. Microreticulation present on disk, though extremely superficial, difficult to detect, isodiametric, absent on marginal explanation, puncturation rather coarse, extremely dense, even near base, somewhat rugose, on lateral explanation sparser, punctures deeply impressed, with sharp margins, very densely packed, at apex slightly smaller than on disk. Surface impilose, moderately dull, rather coriaceous.

Elytra (Figs 421, 577). Rather elongate, though comparatively shorter than in other species, moderately convex, depressed on disk, rather parallel. Lateral borders slightly widened in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, in anterior quarter suddenly widened, not concealed. Basal border line absent. Lateral margin on

border with fringe of shorter setae, below border with elongate setae. Series of umbilical pores consisting of 3 spaced pores behind shoulder. Setae rather elongate. Pores, hovewever, very difficult to detect when setae are broken. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow furrows and slight ridges. Microreticulation distinct, fine, isodiametric, puncturation coarse, though not much coarser than on pronotum, dense, slightly finer at base and near scutellum, at apex, and laterally. Punctures deeply impressed with sharp margins. Shoulders slightly less densely punctate. Apex and lateral part rather densely punctate. Surface generally impilose, though laterally with some scattered elongate setae, fairly dull.

Lower surface. Prosternal process rather short, convex, rather carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia rather short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Fig. 2441). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere weakly divided in an fairly sclerotized apical part and an elongate, feebly sclerotized basal part. This division presumably reflcts the original division of stylomere 1 and 2. Altogether, stylomere elongate, moderately wide, with rounded apex, median border slightly concave, lateral border convex, apex with 2-3 elongate apical setae. Lateral plate very elongate, narrow at apex, with 1-2 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype captured in September.

Distribution (Fig. 649). Northern part of southwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the rounded basal angles of pronotum.

Cainogenion obscurum (Castelnau, 1867)

Figs 1, 232-236, 245, 422, 579, 580, 650

Adelotopus obscurus Castelnau, 1867, p. 34; 1868, p. 120; Gestro 1884, p. 303; Blackburn 1901a, p. 19.
Cainogenion obscurum, Notman 1925, p. 11, 12, 30; Csiki 1933, p. 1637; Moore et al. 1987, p. 54.
Adelotopus punctipennis Putzeys (nomen nudum).
Adelotopus distinctus Chaudoir (part) (nomen nudum).

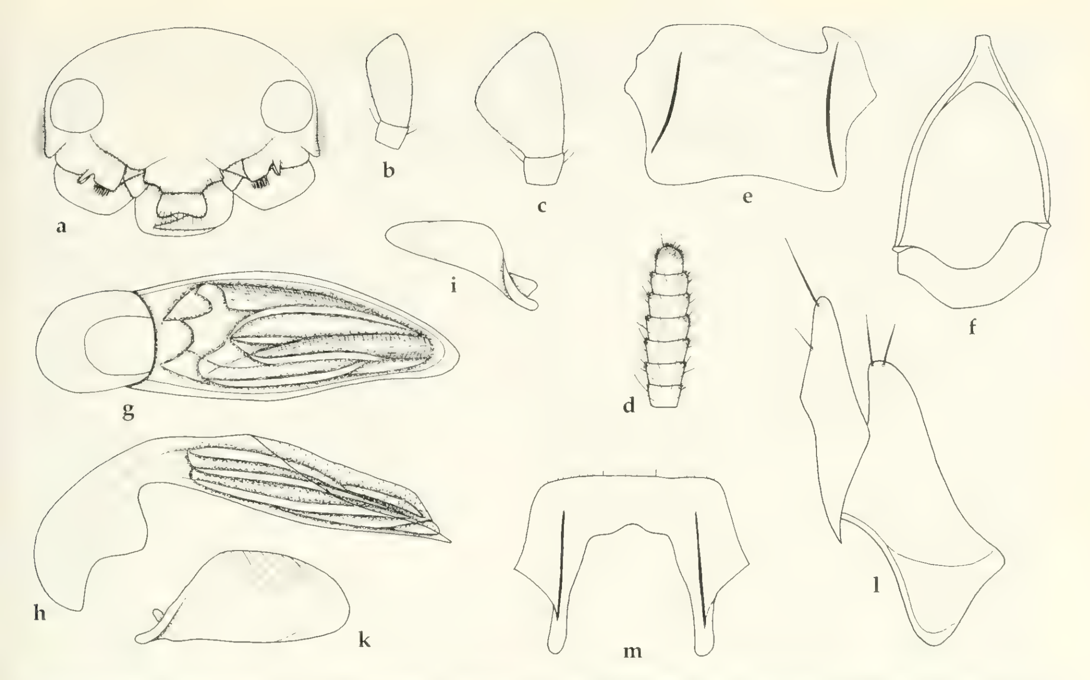
Types. Lectotype (by present designation): ♀, Sydney, Sydney Coll. Castelnau, *obscurum* Cast. (MCSN). – Paralectotypes: 2♂♂, 1♀, Sydney, Sydney Coll. Castelnau (MCSN); 2♀♀, Sydney Coll. Castelnau (MCSN).

Note. The "type series" of *obscurum* from MCSN includes additional 8 specimens from "Wide Bay" partly bearing labels from Castelnau's hand, and 1♀ from Melbourne bearing a handwritten label "Melbourne comp. with *ipsoides*". Although the comparison with *ipsoides* is mentioned in the description, all these specimens cannot serve as syntypes, because the description includes only specimens from "Sydney". The specimens from Wide Bay, moreover, do not belong to *obscurum*, but to *subopacum* (Macleay).

Cainogenion subopacum (Macleay) has been for a long time regarded as synonymous with *C. obscurum* (see below). This synonymy, however, is being rejected here.

Decriptions of "*A. punctipennis* Putzeys" and "*A. distinctus* Chaudoir" apparently have been never printed, so both names are nomina nuda, even when the examined material includes a specimen labelled "TYPE, *Adelotopus punctipennis* Putz. dét. J. Putzeys".

Type locality: "Sydney", New South Wales.



Figs 245a-m. *Cainogenion* (s. str.) *obscurum* (Castelnau). Details of head and genitalia. For legends see fig. 239.

Diagnosis. Rather large, wide, more or less uniformly reddish-piceous species with a fringe of long setae on the margins of pronotum and elytra, barely concave surface of clypeus, very dense and coriaceous puncturation, and dense and elongate pilosity on the whole surface. Further distinguished from *C. subopacum* (Macleay) by not concave clypeus and more produced basal angles of pronotum; from *C. interiore*, spec. nov. by longer, narrower, and less symmetric aedeagus with wider, more rounded apex, shorter parameres, straight upper border of right paramere, and wider excision of sternum VIII; and from *C. parumpilosum*, spec. nov. by denser pilosity, more produced basal angles of pronotum, longer aedeagus, wider excision of ♂ sternum VIII, longer basal process of ♀ sternum VIII, and narrower stylomere.

Description

Measurements. Length: 5.3-7.5 mm. Ratios. Width/length of pronotum: 1.68-1.78; width pronotum/head: 1.67-1.87; length/width of elytra: 1.51-1.60; length elytra/pronotum: 2.61-2.89.

Colour (Fig. 422). Reddish-piceous to piceous, all margins of pronotum and lateral margins of elytra rather widely reddish, sometimes disk of elytra slightly lighter. Lower surface dark reddish, posterior abdominal sterna in middle slightly darker. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 232-235, 245a-d). Rather short, fairly wide, frons gently convex. Eyes fairly large. Lateral border of head more or less regular, not fully straight, without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with rectangular, sometimes even acute anterior border, then deeply incised, behind this incision with short, tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus barely concave, margin laterally irregularly oblique, in middle straight or faintly concave, along border with several elongate setae. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate and some short setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex slightly obtuse. Wings of mentum rather narrow and elongate, apex slightly obtuse. Glossa rather narrow, elongate, apically rounded, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather

short, in middle slightly widened. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border slightly concave, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.9-2 × as wide as long. Microreticulation present, though difficult to detect, because puncturation extremely dense, rather coarse, very rugose, punctures deeply impressed and very closely packed. Surface densely and elongately pilose, dull, coriaceous. Lateral border of head and lateral border of suborbital lamina with rather dense, elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate apparently impilose. Gula impilose.

Pronotum (Figs 422, 580). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base slightly wider than apex, though widest about in or shortly behind middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, distinctly concave. Apical angles obtuse, slightly projecting, not fully rounded off. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded or even obtuse, markedly produced posteriorly. Base in middle markedly convex, near basal angles deeply concave, not bordered. Surface near base with rather distinct transverse impression. Lateral margin on and below border with very elongate setae. Microreticulation present on disk, though very fine, difficult to detect, isodiametric, absent on marginal explanation, puncturation rather coarse, though at apex distinctly finer, very dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, very densely packed. Surface with irregular, vermicular rugosities, desnely and rather elongately pilose, dull, highly coriaceous.

Elytra (Figs 422, 579). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders more or less distinctly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on and below border with elongate setae. Series of umbilical pores consisting of c. 4-6 rather spaced pores behind shoulder. Setae rather elongate. Pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow furrows and slight vermicular ridges. Microreticulation distinct, though fine, isodiametric, puncturation dense and very coarse, even much coarser than on pronotum, dense, less coarse near scutellum, at apex, and laterally. Punctures slightly elongate, deeply impressed, with sharp margins. Shoulders extensively punctate. Apex and lateral part rather densely punctate. Surface densely and elongately pilose, fairly dull.

Lower surface. Prosternal process rather short, convex, vaguely carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia moderately wide. Metatibia rather short, c. 4 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 245e-k). Genital ring moderately wide, convex, barely asymmetric, with rather short apex, large, feebly asymmetric, deeply excised base. Basal border on left side characteristically concave. Sternum VII comparatively wide, apically oblique or straight, with deep and fairly wide excision, base concave, basal angles rounded, lateral parts rather short. Aedeagus rather elongate, depressed, in middle moderately widened, near apex on left side more or less distinctly concave, slightly asymmetric. Basal part long, markedly bent. Lower surface gently convex. Apex moderately wide, obtusely rounded, faintly asymmetric. Orifice rather elongate, internal sac moderately complex. Right paramere fairly elongate, evenly tapering, with rounded apex, left paramere considerably larger than right, almost square, with oblique, or gently rounded, or faintly concave apex, markedly striped.

♀ genitalia (Figs 245l,m). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere narrow and elongate, with attenuate, rounded apex, median border in middle slightly concave, lateral border almost straight, apex with 1-3 elongate apical setae. Lateral plate very elongate, with 2-3 elongate apical setae.

Variation. Apart from some variation of size, relative width of pronotum and elytra, shape of clypeus, and density of puncturation on head and pronotum, little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of gum-like eucalypts, sometimes in the neighbourship of small black ants of the genus *Iridomyrmex* Lund or a related genus, other specimens caught " under bark attended by ants", and "under eucalypt bark". Dated specimens captured from October to January, though many specimens undated.

Distribution (Fig. 650). Southeastern South Australia, Victoria, New South Wales to southern Queensland.

Material examined (98). **SA:** 1♂, Adelaide 12.XII.1867, Soc. Ent. Belg. Coll. PUTZEYS, TYPE, *Adelotopus punctipennis* Putz. dét. J. Putzeys (IRSNB). – **Vic:** 1♀, Melbourne Coll. Castelnau, *A. ipsoides* Westw. det. Castelnau, Melbourne comp. with *ipsoides*, *A. obscurus* Cast. det. R. Gestro (MCSN). – **NSW:** 3 (sex?, defect), *Adelotopus obscurus* Cast. Id. by T. G. Sloane, Morilla 8.I.08 E.W.F. (ANIC); 2♀♀, Lakemba S. Young XII.32, K 47632, det. *obscurus* (AMS); 2♀♀, 3892, Illawarra, 3892 *Adelotopus obscurus* Macl. (SAMA); 1♂, Wagga, X. C. Oke, *Adelotopus obscurus* Cast. (NMV); 1♀, Sydney Coll. Castelnau, *obscurum* Cast., lectotype! (MCSN); 2♂♂, 3♀♀, Sydney Coll. Castelnau, paralectotypes! (MCSN); 1♀, Sydney Griffith, Griffith Collection Id. by A. M. Lea, 280 *Adelotopus subopacus* Macl. (SAMA); 1♀, Sydney Deane (UQIC); 1♀, Sydney: Coll. Lüddemann, *Adelotopus obscurus* Cast. Id. by A. M. Lea (DEIB); 2♀♀, Sydney: Coll. Lüddemann, Lea det., det. *obscurus* (DEIB); 1♀, Museum Paris Env. de Sidney H. Bureau 1923 (MNHN); 4♂♂, NSW 110, 3 km sw. Bulga, 7.XII.1990, M. Baehr (CBM); 1♂, 2♀♀, Muswellbrook, E. W. Ferguson Collection (ANIC); 1♀, Newnes 25.I.1969 D. A. Doolan, D. A. Doolan Collection (AMS); 1♀, Greta 25.XI.57, J. Sedlacek Collector (CSB); 1♂, Tamworth 9.XII.92. Lea, *Adelotopus subopacus* Macl. 280, *obscurus* Cast., 7135 *Adelotopus obscurus* Cast. (SAMA); 1♂, 2♀♀, *A. subopacus* Macl. Tamworth, *Adelotopus subopacus* M., J. C. Goudie Collection, *C. obscurum* (NMV); 1♀, NSW 92, Caroll, Namoi R. 57 km w. Tamworth, 2.XII.1990, M. Baehr (CBM); 1♀, Gunnedah X.57 F. E. Wilson, F. E. Wilson Collection, det. *obscurus* (NMV); 1♂, Mullaley X.29 H. J. Carter, det. *obscurus* (MCZ); 1♀, Mullaley HJC X.29, *Adelotopus obscurus* Cast. Id. by H. J. Carter, *Cainogenion obscurum* Cast. (MCZ); 3♀♀, Mullaley, XII.1929, H. J. Carter (ANIC); 2♀♀, Narrabri 5.XI.1932 K. C. M[c] Keown, K 66549, det. *obscurus* (AMS); 1♂, Gordon, E. Nye, I.25 (NMV); 3♂♂, 6♀♀, Prospect 3.I.31 K. C. M. M[c] Keown, K 63257, *A. obscurus* (AMS); 1♂, 7♀♀, Prospect 4.I.31, det. *obscurus* (AMS); 1♀, Rope's Ck., E. W. Ferguson Collection (ANIC); 2♀♀, Wallamundry Ck. 11.XI.1972 D. A. Doolan, D. A. Doolan Collection (AMS); 1♂, Guta, Coll. Dr. Reitter, *Adelotopus* sp. (FMT); 1♀, Mt. Irvine H. J. Carter, H. J. Carter Coll., det. *obscurus* (NMV); 1 (sex?), Young R[d]. 28.XI.02, C. French's Colln., *Adelotopus obscurus* Cast. (NMV); 2♀♀, I.01, GeoCompere Collector, *Cainogenion obscurum* Cast. det. H. Notman (AMNH, USNM); 2♀♀, 1909 Deane, *Adelotopus*, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♀, *ipsoides* Westw. sec. M[c]L. (?), *obscurus* Cast. sec. descr., Ex Musaeo H. W. Bates (MNHN); 3♀♀ (MNHN). – **Qld:** 2♀♀, Rivertree, *Adelotopus obscurus* Cast. (UQIC); 1♀, Nat. Mus. Victoria – Gayndah (NMV); 3♀♀, Rockhampton, J. Sedlacek Collector (CSB); 1♀, Mus. Godefroy Peak Downs, Museum Leiden *Cainogenion obscurum* Cast. Det., 10506, *Adelotopus subopacus* M.Mc.L. (NNML); 1♂, Mus. Godefroy Peak Downs, Museum Leiden *Cainogenion obscurum* Cast. Det., 10506 (NNML); 1♀, *subopacus* M[c]L. teste Masters, Ex Musaeo H. W. Bates (MNHN); 1♀, 43582, Masters, Fry Coll., det. *ipsoides* (BMNH); 2♀♀, 86, 87 *Adelotopus subopacus* Macleay (OUM); 1 (sex?), Masters, Fry Coll. (BMNH). – **Aus:** 1♂, North N. Holl., Janson Acq. (MNHN); 1♀, E. Australia, det. *ipsoides* (BMNH); 1♂, *A. distinctus* Chaud. (ZSM); 1♂, Coll. E. Witte, *Fortnumi* (SMF); 1♂, 1♀, Ex Musaeo Thorey (MNHN). – **?:** 1♂, Galston Dumbrell (SAMA); 1♀, Ac. 23246, *obscurus* Cast. (AMNH); 1 (sex?), 22, *punctatissimus* Putz., det. *obscurus* (MNHB); 1♀ (OUM).

Cainogenion subopacum (Macleay, 1871) (stat. restit.)

Figs 246, 423, 581, 582, 651

Adelotopus subopacus Macleay, 1871, p. 94; Gestro 1884, p. 303; Blackburn 1901a, p. 19.
Cainogenion subopacum, Notman 1925, p. 30; Csiki 1933, p. 1637; Moore et al. 1987, p. 54.
Adelotopus luridus Dohrn (nomen nudum).
Adelotopus distinctus Chaudoir (part) (nomen nudum).

Note. Already Gestro (1884) regarded *A. subopacus* Macleay synonymous of *A. obscurus* Castelnau, and he was followed by all later authors including Moore et al. (1987). This synonymy, however, is herein rejected, since both taxa are certainly different and rather easily distinguished. Because both taxa are apparently sympatric in parts of their range, *C. subopacum* is reestablished to full specific rank.

Decriptions of "*A. luridus* Dohrn" and "*A. distinctus* Chaudoir" apparently have been never printed, so both names are nomina nuda.

Types. Lectotype (by present designation): ♀, Gayndah, Syntype, *Adelotopus subopacus* Macl. Rockhampton (ANIC-MMS). – Paralectotype: 1♀, same data (ANIC-MMS). Actually, both specimens are pinned through the same large label bearing the species name and the wrong locality "Rockhampton".

Type locality: "Gayndah", Queensland.

Diagnosis. Rather large, wide, reddish-piceous species with distinct lighter spot on disk of elytra, a fringe of long setae on the margins of pronotum and elytra, deeply concave surface of clypeus, very dense and coriaceous puncturation, and dense and elongate pilosity on the whole surface. Distinguished from all related, distinctly pilose species by the markedly concave clypeus. Further distinguished from *C. obscurum* (Castelnau) by less produced basal angles of pronotum; from *C. interiore*, spec. nov. by less produced basal angles of pronotum, longer, narrower, and less symmetric aedeagus with wider, more rounded apex, shorter parameres, straight upper border of right paramere, and wider excision of sternum VIII; and from *C. parumpilosum*, spec. nov. by denser pilosity, longer aedeagus, wider excision of ♂ sternum VIII, and longer basal process of ♀ sternum VIII.

Description

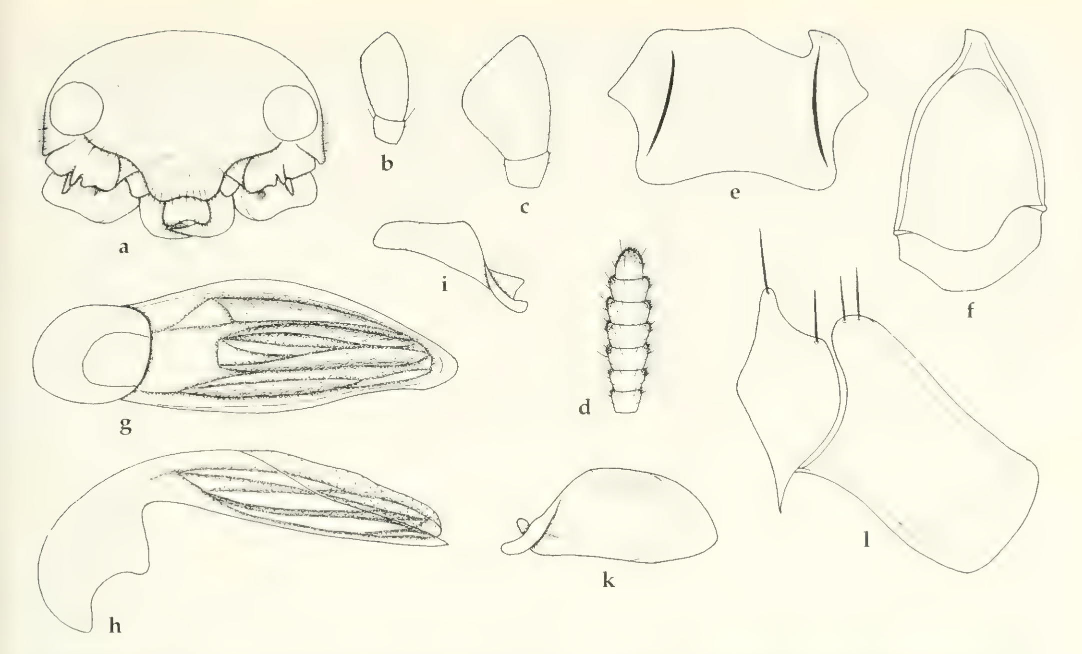
Measurements. Length: 5.1-7.6 mm. Ratios. Width/length of pronotum: 1.67-1.80; width pronotum/head: 1.73-1.92; length/width of elytra: 1.52-1.58; length elytra/pronotum: 2.62-2.87.

Colour (Fig. 423). Reddish-piceous to piceous, all margins of pronotum and lateral margins of elytra rather widely reddish, disk of elytra usually distinctly lighter. Lower surface reddish. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 246a-d). Rather short, fairly wide, frons faintly convex or almost straight. Eyes comparatively large. Lateral border of head more or less regular, not fully straight, without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with rectangular anterior border, then deeply incised, behind this incision with moderately elongate, tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus deeply concave, rather quadrate, margin laterally sometimes irregularly oblique, in middle distinctly concave, laterally along border with several elongate setae. Labrum separated from clypeus by deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex rather acute. Wings of mentum narrow and elongate, apex acute. Glossa rather narrow, elongate, apically rounded, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather short, in middle slightly widened. Terminal palpomere of labial palpus widened, rather securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border slightly concave, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.9-2 × as wide as long. Microreticulation present, though difficult to detect, because puncturation extremely dense, rather coarse, very rugose, punctures deeply impressed and very closely packed. Surface densely and elongately pilose, dull, coriaceous. Lateral border of head and lateral border of suborbital lamina with rather dense, elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate apparently impilose. Gula impilose.

Pronotum (Figs 423, 582). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base distinctly wider than apex, though widest in or shortly in front of middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, faintly concave. Apical angles obtuse, barely projecting, almost rounded off. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded or even obtuse, moderately produced posteriorly. Base in middle markedly convex, near basal angles moderately concave, not bordered. Surface near base with rather distinct transverse impression. Lateral margin on and below border with very elongate setae. Microreticulation present on disk, though very fine, difficult to detect, isodiametric, absent on marginal explanation, puncturation rather coarse, though at apex distinctly finer, very dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, very densely packed. Surface with irregular, vermicular rugosities, densely and rather elongately pilose, dull, highly coriaceous.

Elytra (Figs 423, 581). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders more or less distinctly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on and below border with elongate setae. Series of umbilical pores consisting of c. 3-4 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewev-



Figs 246a-l. *Cainogenion* (s. str.) *subopacum* (Macleay). Details of head and genitalia. For legends see fig. 239.

er, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow furrows and slight vermicular ridges. Microreticulation distinct, though fine, isodiametric, puncturation dense and very coarse, even much coarser than on pronotum, less coarse near scutellum, at apex, and laterally. Punctures slightly elongate, deeply impressed, with sharp margins. Shoulders extensively punctate. Apex and lateral part rather densely punctate. Surface densely and elongately pilose, fairly dull.

Lower surface. Prosternal process rather short, convex, vaguely carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus slightly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia moderately wide. Metatibia rather short, c. 4 × as long as wide, 1st tarsomere of metatarsus c. 1.4 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 246e-k). Genital ring moderately wide, convex, barely asymmetric, with rather short apex, large, feebly asymmetric, deeply excised base. Basal border on left side characteristically concave. Sternum VII comparatively wide, apically oblique or straight, with deep and fairly wide excision, base concave, basal angles rounded, lateral parts rather short. Aedeagus rather elongate, depressed, in middle moderately widened, near apex on left side usually distinctly concave, slightly asymmetric. Basal part long, markedly bent. Lower surface gently convex. Apex moderately wide, obtusely rounded, faintly asymmetric. Orifice rather elongate, internal sac moderately complex. Right paramere fairly elongate, evenly tapering, with rounded apex, left paramere considerably larger than right, almost square, with oblique, or gently rounded, or faintly concave apex, markedly striped.

♀ genitalia (Fig. 246l). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere moderately narrow and elongate, with attenuate, rounded apex, median border in middle slightly concave, lateral border gently convex, apex with 1-3 elongate apical setae. Lateral plate very elongate, with 2-3 elongate apical setae.

Variation. Apart from some variation of size, relative width of pronotum and elytra, shape of clypeus, apical angles of pronotum, and shape of stylomere, little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Specimens collected by me under bark of river gums and other gum-type eucalypts, sometimes together with small ants of the genus *Iridomyrmex* Lund or a related genus, other specimens caught "under bark". Dated specimens captured from September to May, though by far most specimens durig November and December.

Distribution (Fig. 651). Eastern Queensland north to about Townsville; ? New South Wales, Tasmania, Western Australia. There are few and mostly old records from New South Wales and most of these records are without exact locality. One specimen from Morilla, however, is mounted with three specimens of *C. obscurum* on the same card. The occurrence of *C. subopacum* in New South Wales is therefore somewhat doubtful, but cannot denied. But the records from Tasmania and from Western Australia are certainly very doubtful, especially because the latter record is from Dohrn, an author notorious for his inaccurate labels.

Material examined (239). **Tas:** 1♀, Vetter (NHMW). – **NSW:** 1 (sex?), *Adelotopus obscurus* Cast. Id. by T. G. Sloane, Morilla 8.I.08 E.W.F. (ANIC); 1♂, *obscurus* Castelnau, Sydney Stevens, Ex Musaeo Chaudoir (MNHN); 3♂♂, Edwards Coll., det. *obscurus* (AMNH); 1♂, 82, 82 *Adelotopus obscurus* Castel. (OUM); 1♀, 43581, Masters, Fry Coll., det. *obscurus* (BMNH); 1 (sex?), Masters, Fry Coll., det. *obscurus* (BMNH); 1♂ (OUM). – **Qld:** 1♀, Qld 68, 6 km n. Rathdowney 26.XI.1990, M. Baehr (CBM); 1♀, Canungra 28.XII.51 C. Oke, det. *obscurus* (NMV); 1♂, 2♀♀, 1 (sex?), Killarney, T.G.S. 27.XII.10 (ANIC); 1♂, 1♀, Killarney, H. J. Carter, H. J. Carter Coll., *C. obscurum* (NMV); 1♀, Killarney, T.G.S. 27.XII.10, *Adelotopus opacus* (sic!) Cast. Id. by T. G. Sloane, J. C. Goudie Collection (NMV); 1♀, Wyberba 24.XII.46 E. Sutton, E. Sutton Collection (QMB); 1♂, Brisbane H. Hacker 28.IX.15, *Adelotopus ipsoides* Westw. (QMB); 1♂, 1♀, Brisbane, Illidge, *A. obscurus* (UQIC); 1♂, Brisbane Illidge, *A. obscurus* Cast. Bris., *Adelotopus subopacus* M^cL Bris. (UQIC); 3♂♂, 2♀♀, Brisbane Illidge (UQIC); 2♀♀, Brisbane X.37, J. G. Brooks Bequest, *obscurus* Cast. 1612 (ANIC); 1♂, Brisbane, Coll. Carl Schuchardt, det. *subopacus* (SMF); 1♀, Brisbane 11.XII.1963 H. A. Rose (UQIC); 2♂♂, Brisbane: O. W. Tiegs (QMB); 1♂, 1♀, Brisbane X, Wheeler Coll. det. *obscurus* (MCZ); 1♂, 1♀, Brisbane, det. *obscurus* (MCZ); 1♂, Brisbane, Janson Acq. (MNHN); 1♂, 8.X.19 Bris. (QMB); 1♀, Brisbane, Coll. Carl Schuchardt, det. *subopacus* (SMF); 1♂, ? ? Bris., *Adelotopus sub-opacus* Macl. (QMB); 1♂, Sandgate (BMH); 2♀♀, Amberley, 18.XII.1932, *Cainogenion obscurum* (Castelnau) [Series det. by A. Walford-Huggins] (CMP-WHC); 1♀, Ipswich, II.67 JR, M. 105., J. G. Brooks Bequest (ANIC); 1♂, N. Pine R. 4.XII.62 G. Monteith (BMH); 1♀, Nth. Pine R. 4.XII.62 G. Monteith (UQIC); 1♂, 3♀♀, Caboolture, X.1920 F. E. Wilson, *Adelotopus obscurus* Cast. Id. by T. G. Sloane, F. E. Wilson Coll. (NMV); 1♂, Caboolture, ?.X.1920, F. E. Wilson, *Adelotopus obscurus* Cast. Id. by F. E. Wilson (AMS); 1♀, Caboolture, ?.1920, F. E. Wilson, 4480 *Adelotopus obscurus* Cast. Id. by F. E. Wilson, A. H. Elston Collection (AMS); 1♂, Lake Kurwongbah Petrie, Q. 4.-8.II.1962 G. Monteith (UQIC); 2♀♀, Emu Ck. 24.XI.1974, J. Sedlacek Collector (CSB); 1♀, Dalby, Mrs. F. H. Hobler, 19159, *Adelotopus* (SAMA); 1♀, Dalby 31.XII.25 (UQIC); 1♀, Qld 11, 5 km w. Wengenville e. Bunya Mt. 8.XI.1990, M. Baehr (CBM); 3♀♀, Bunya Mt. N. Geary (QMB); 1♀, Yarraman 3.X.1979, J. Sedlacek Collector (CSB); 3♂♂, 1♀, c. 25 km S of Bundaberg, Electra State Forest 1.-5.IX.76 H. Frauca (ANIC); 2♀♀, Wide Bay, Wide Bay Coll. Castelnau (MCSN); 2♂♂, 4♀♀, Wide Bay Coll. Castelnau (MCSN); 2♂♂, 2♀♀, Wide Bay, CHNM 1955, Karl Brancsik ex Eduard Knirsch, *Cainogenion obscurum* Cast. G. E. Ball det. 1987 (FMNH, UASM); 2♂♂, 2♀♀, Eidsvold 20.X.29 (ANIC, SAMA); 1♂, Eidsvold, 20.X.29, *Adelotopus obscurus* Macl. W. K. Hughes det. (ANIC); 16♂♂, 10♀♀, Qld 19, Burnett R., 10 km n. Eidsvold, 9.XI.1990, M. Baehr (CBM, ZSM); 1♀, Biggenden, XII.1973, H. Frauca (ANIC); 1♀, Qld 20, Cania Gorge, 25 km nw. Monto, 9.-11.XI.1990, M. Baehr (CBM); 2♂♂, 1♀, Maryborough E. W. Fischer (SAMA); 4♂♂, 2♀♀, Qld 49, 10 km se. Mt. Larcom, 20.XI.1990, M. Baehr (CBM); 2♀♀, Gayndah, *Adelotopus subopacus* Macl., Rockhampton, lectotype!, paralectotype! (ANIC-MMS); 2♀♀, Gayndah Masters, K 12232, det. *obscurus* (AMS); 1♀, Gayndah, *obscurus* Cast. *subopacus* Macl., Ex Musaeo Mniszech (MNHN); 2♀♀, Gayndah (NMV); 2♀♀, *Adelotopus subopacus* (W. M. L.) Rockhampton, 10506, *Adelotopus subopacus* ML R., Godeffroy Collection (NMV); 1♂, 2♀♀, Rockhampton 26.XII.1967, J. & M. Sedlacek Collectors (BMH); 1♂, 1♀, Rockhampton, Coll. C. Felsche, det. *castaneus* (SMTD); 1♂, Rockhampton Damell Higgins 1867 2f (?) (OUM); 1♀, Rockhampton, J. Sedlacek Collector (CSB); 7♂♂, 3♀♀, Rockhampton 26.-27.XI.1967, J. &. M. Sedlacek Collectors BISHOP (BMH); 1♀, Rockhampt., *Adelotopus punctatissima* (?), Ex Musaeo L. Fairmaire (MNHN); 1♂, 2♀♀, 1 (sex?), Rockhampton (OUM); 1♀, *Adelotopus sub-opacus* Macl. N. R'Ton 12.X.35, S. R. E. Brock Collection (ANIC); 1♀, Hwy. 1, 51 mi. N. Marlborough, A. E. Michelbacher, 20.XI.1969 (CAS); 1♂, 1♀, Dawson distr., Barnard Coll. (MNHN); 1♀, Qld 25, Parker Ck., 58 km n. Dingo, Fitzroy Dev. Rd. 11.XI.1990, M. Baehr (CBM); 2♂♂, 1♀, Mackenzie River 29.I.1968 leg. G. Hangay (HNMB); 1♀, *subopacus* M. Leay *obscurus* Casteln. Port Denison, Ex Musaeo Mniszech (MNHN); 1♀, Millmerran 20.V.44 G. Macqueen & E. Sutton, E. Sutton Coll. (QMB); 4♂♂, 3♀♀, Goodna 10.IV.24 H. Hacker (QMB); 2♂♂, 1♀, Marmor, H.J.C. X.24, *Adelotopus obscurus* Cast. (ANIC); 1♀, *Adelotopus subopacus* Macl. D. Macl. 1977, Queensland dedit Macleay 1877, *A. subopacus* Macleay, det. Macleay 1877, = *A. obscurus* Cast. det. R. Gestro, 1884 (MCSN); 1♀, *subopacus* M'Leay, W. M'Leay, Ex Musaeo Chaudoir (MNHN); 1♀, *subopacus* (M^cL.) C. Queensland (ANIC); 1♀, *Adelotopus ipsoides* Westw., Pascoe Coll. (BMNH); 1♂, 58, Howitt Colln (NMV); 1♂, 57651 Krefft, det. *obscurus* (MNHB); 1♂, 2♀♀, 1 (sex?), Janson Acq. (MNHN); 1♂ (OUM);

2♂♂ (ANIC). – **WA:** 2♀♀, *Adelotopus luridus* Dhn mss. 1869. Swan River. Dohrn (MCSN). – **Aus:** 2♀♀, N. A. Dhn., Soc. Ent. Belg. Coll. PUTZEYS, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♀, Lederer 863, Nov. Holl. bor. (NHMW); 1♀, *obscurus* Cast. *subopacus* W. Macl., 42154, *distinctus* Chd. ined., *obscurus* Casteln. (MNHB); 1♂, W. E. Edwards, det. *obscurus* (MCZ); 1♂, 66, W. Edwards, det. *obscurus* (MCZ); 1♀, 555, *Adelotopus subopacus* MLeay, det. *obscurus* (MCZ); 1♀, 555, *subopacus* Macl., det. *obscurus* (MCZ); 1♀, *Adelotop. obscurus* Cast. (MCZ); 1♂, Hist.-Coll. Nr. 42154 Coll. Schaum, det. *obscurus* (MNHB); 2♀♀, Thorey, 43868, det. *obscurus* (MNHN); 1 (sex?), Dohrn 91, *Adelotopus obscurus* Casteln., 608., *obscurus* Cast. (NHMW); 4♀♀, Coll. Schaum, *Adelotopus obscurus* Cast. Id. by T. G. Sloane, *C. obscurum* Cast. (DEIB); 1♀, Coll. E. Schwarzer, *Adelotopus Fortnumi* Hp., *ipsoides* (SMF); 1♀, Coll. E. Schwarzer, *Adelotopus subopacus* ML (SMF); 1♂, 2♀♀, 1880 III Fisch. (NHMW); 1♀, W. Macleay 1862 (OUM); 1 (sex?), *A. ?* Hope (OUM); 2♀♀, Thorey 1867 (NHMW); 1♂, Ex Musaeo L. Fairmaire (MNHN); 2♀♀, Ex Musaeo Chaudoir, det. *obscurum* (MNHN); 1♂, *Adelotopus subopacus* M.L. dét... (IRSNB); 1♂, *Adelotopus*, 1880 III. Fisch. (NHMW); 1♂, *Adelotopus* sp. ?, Coll. B. Schwarzer (SMF); 1♂, Mc Coy 1886 (NHMW); 2♂♂, 1882 I. (NHMW); 1♂, 1♀, 1 (sex?), 2826 (SMTD). – **?:** 2♂♂, Fundort ?. Coll. B. Schwarzer, det. *subopacus* (SMF); 2♀♀, 1 (sex?), K 12232, det. *obscurus* (AMS); 2♀♀, Ex Musaeo Mniszech, det. *obscurum* (MNHN); 1♀, *obscurus* Castel. M. B., Ex Musaeo Mniszech (MNHN); 1♂, Collection E. Rousseau, R.I.Sc.N.B. I.G. Coll. gen. (IRSNB); 1♂, 67 (ANIC); 1♀, 2125 (NMV); 1♀, 120A, 280 (ANIC); 1♂ (ZSM).

Cainogenion interiore, spec. nov.

Figs 71, 247, 424, 583, 584, 651

Adelotopus obscurus Castelnau, 1867 (in part), Sloane 1898, p. 514.

Types. Holotype: ♂, Ord R (SAMA). – Paratypes: 1♂, Upper Ord R. E. Kimberley Helms, 422, *Adelotopus obscurus* Cast. (BMNH); 1 (sex?), Ord R., Ditto 3893 N. W. Australia (SAMA); 4♀♀, Australia: N. T.: Alice Springs 550-650 m, 20-24.XI.1968, N. L. H. Krauss Coll. BISHOP Museum (BMH, CBM); 1♂, 1♀, Daly Waters, J. H. Sedlacek Collector (CSB); 1♂, 1♀, N. Australia, Pascoe Coll. (BMNH).

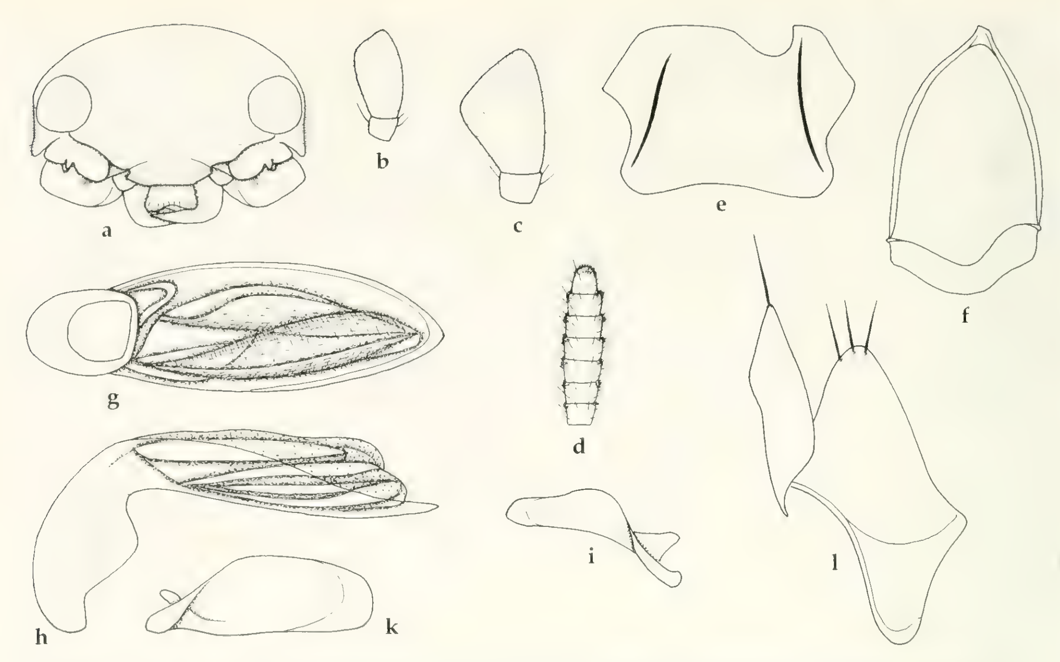
Diagnosis. Rather large, wide, uniformly reddish-piceous species with a fringe of long setae on the margins of pronotum and elytra, barely concave surface of clypeus, very dense and coriaceous puncturation, and dense and elongate pilosity on the whole surface. Further distinguished from *C. obscurum* (Castelnau) by shorter, wider, symmetric aedeagus with narrower, more acute apex, longer parameres, sinuate upper border of right paramere, and narrower excision of sternum VIII; from *C. subopacum* (Macleay) by not concave clypeus and more produced basal angles of pronotum; and from *C. parumpilosum*, spec. nov. by denser pilosity, more produced basal angles of pronotum, wider aedeagus with narrower. more acute apex, longer basal process of ♀ sternum VIII, and narrower stylomere.

Description

Measurements. Length: 5.5-7.0 mm. Ratios. Width/length of pronotum: 1.67-1.76; width pronotum/head: 1.68-1.80; length/width of elytra: 1.55-1.60; length elytra/pronotum: 2.65-2.81.

Colour. Uniformly reddish-piceous to piceous, in dark specimens all margins of pronotum and lateral margins of elytra rather widely reddish. Lower surface more or less dark reddish. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 247a-d). Rather short, fairly wide, frons gently convex. Eyes comparatively large. Lateral border of head more or less regular, rather straight, without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with obtuse to gently rounded anterior border, then deeply incised, behind this incision with short, tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus barely concave, margin laterally irregularly oblique, in middle straight or faintly concave, along border with several elongate setae. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate and some short setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex slightly obtuse. Wings of mentum rather narrow and elongate, apex acute to faintly obtuse. Glossa rather narrow, elongate, apically rounded, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather short, in middle slightly widened. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border slightly concave, angles widely rounded. Antenna



Figs 247a-l. *Cainogenion* (s. str.) *interiore*, spec. nov. Details of head and genitalia. For legends see fig. 239.

moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 2 × as wide as long. Microreticulation present, though difficult to detect, because puncturation extremely dense, rather coarse, very rugose, punctures deeply impressed and very closely packed. Surface densely and elongately pilose, dull, coriaceous. Lateral border of head and lateral border of suborbital lamina with rather dense, elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate shortly and sparsely pilose. Gula impilose.

Pronotum (Figs 424, 584). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base slightly wider than apex, though widest about in or shortly behind middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, distinctly concave. Apical angles obtuse or rounded off, slightly projecting. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded or even obtuse, markedly produced posteriorly. Base in middle markedly convex, near basal angles deeply concave, not bordered. Surface near base with rather distinct transverse impression. Lateral margin on and below border with a dense fringe of very elongate setae. Microreticulation present on disk, though very fine, difficult to detect, isodiametric, absent on marginal explanation, puncturation rather coarse, though at apex distinctly finer, very dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, very densely packed. Surface with irregular, vermicular rugosities, densely and rather elongately pilose, dull, highly coriaceous.

Elytra (Figs 71, 424, 583). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders more or less distinctly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Whole lateral margin on and below border with a dense fringe of elongate setae. Series of umbilical pores consisting of c. 3-5 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as shallow, very irregular furrows and slight vermicular ridges. Microreticulation distinct, though fine, isodiametric, puncturation dense and very coarse, even much coarser than on pronotum, dense, less coarse near scutellum, at apex, and laterally. Punctures slightly elongate, deeply impressed, with sharp margins. Shoulders extensively punctate. Apex and

lateral part rather densely punctate. Surface densely and elongately pilose, fairly dull.

Lower surface. Prosternal process rather short, convex, vaguely carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia rather wide. Metatibia rather short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus c. 1.3 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 247e-k). Genital ring moderately wide, convex, barely asymmetric, with rather short apex, large, feebly asymmetric, deeply excised base. Basal border on left side slightly concave. Sternum VII comparatively wide, apically straight, with deep and short excision, base concave, basal angles rounded, lateral parts rather short. Aedeagus rather short, depressed, in middle rather widened, almost symmetric. Basal part long, markedly bent. Lower surface gently convex. Apex narrow, acute, slightly obtuse only at the very tip, symmetric. Orifice rather elongate, internal sac moderately complex. Right paramere fairly elongate, upper margin distinctly sinuate, with rounded apex, left paramere considerably larger than right, elongate, with obliquely rounded apex, striped.

♀ genitalia (Fig. 247l). Sternum VIII laterally acute, basal process narrow and elongate. Stylomere narrow and elongate, with acute apex, median border in middle slightly concave, lateral border almost straight, apex with 1-2 elongate apical setae. Lateral plate very elongate, with 2-3 elongate apical setae.

Variation. Apart from some variation of size, relative width of pronotum and elytra, and shape of aedeagus little variation noted. The specimens from northwestern Australia, however, are slightly smaller than those from central Australia.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Dated specimens captured in November.

Distribution (Fig. 651). Central and northern central Northern Territory, northwestern Australia.

Material examined (11). Only the type series.

Etymology. The name refers to the distribution in Central and northwestern Australia.

Cainogenion parumpilosum, spec. nov.

Figs 248, 425, 585, 586, 651

Types. Holotype: ♂, Australia, Qld 94/64 Einasleigh R. b. Einasleigh, 11.-12.6.1993, M. Baehr (ANIC). – Paratype: 1♀ same data (CBM).

Diagnosis. Medium-sized, wide, reddish-piceous species with conspicuous spot on elytral disk, a fringe of short setae on the margins of pronotum and elytra, barely concave surface of clypeus, dense and coriaceous puncturation, and sparse and short pilosity on the elytra. Distinguished from related, pilose species by much sparser and shorter pilosity on the elytra and by shorter basal process of ♀ sternum VIII. Further distinguished from *C. obscurum* (Castelnau) by less produced basal angles of pronotum, shorter, wider aedeagus, more triangular parameres, narrower excision of ♂ sternum VIII, and wider stylomere; from *C. subopacum* (Macleay) by not concave clypeus, shorter aedeagus, and triangular parameres; and from *C. interiore*, spec. nov. by less produced basal angles of pronotum, less acute apex of aedeagus, straigh upper margin of right paramere, and wider stylomere.

Description

Measurements. Length: 5.5-5.95 mm. Ratios. Width/length of pronotum: 1.74-1.75; width pronotum/head: 1.75-1.77; length/width of elytra: 1.46-1.56; length elytra/pronotum: 2.50-2.65.

Colour (Fig. 425). Reddish-piceous to piceous, lateral margins of pronotum and of elytra more or less distinctly and rather widely reddish, disk of elytra conspicuously lighter. Lower surface reddish. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 248a-d). Rather short, fairly wide, frons in middle slightly convex, laterally with a shallow impression on eihter side. Eyes comparatively large. Lateral border of head regular, almost

straight, with distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with rectangular or slightly irregular anterior border, then deeply incised, behind this incision with elongate, very large tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus faintly concave, rather short, margin laterally irregularly oblique, in middle faintly concave, laterally along border with several elongate setae. Labrum separated from clypeus by deep furrow, directed obliquely anterior-ventrally, rather elongate, apex rather concave, with c. 10 elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex rather acute. Wings of mentum rather narrow and elongate, apex acute. Glossa rather narrow, elongate, apically rounded, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather short, in middle slightly widened. Terminal palpomere of labial palpus widened, moderately securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border distinctly concave, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.9-2 × as wide as long. Microreticulation present, though difficult to detect, because puncturation dense and coarse, very rugose, punctures deeply impressed and very closely packed. Surface rather densely and elongately pilose, dull, coriaceous. Lateral border of head and lateral border of suborbital lamina with rather sparse, elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate very shortly and sparsely pilose. Gula impilose.

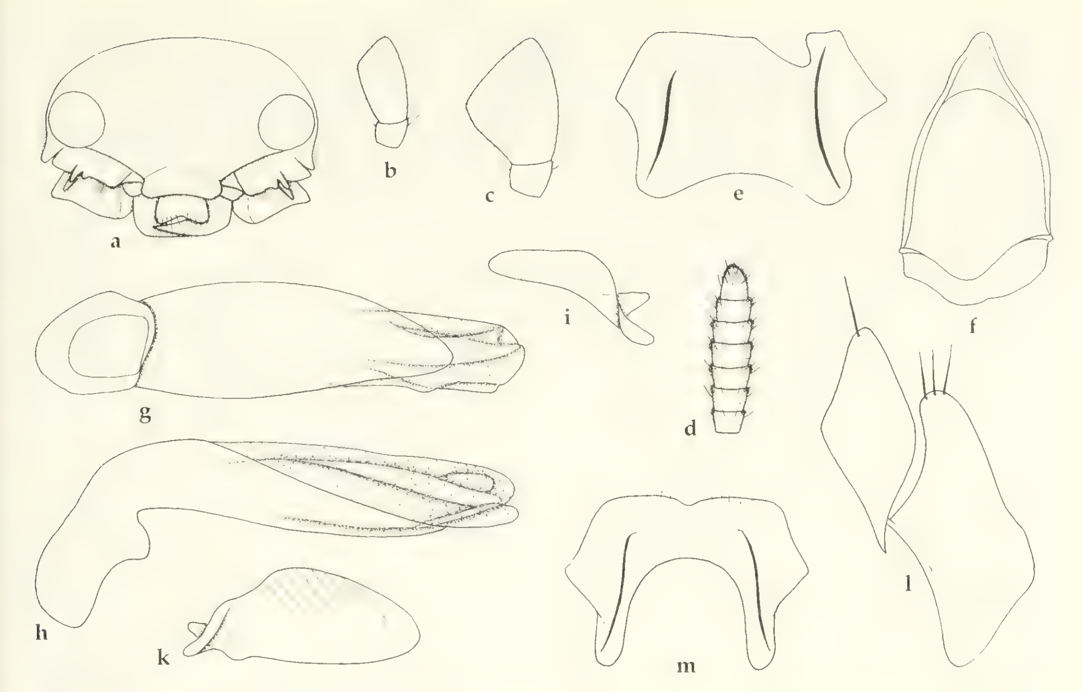
Pronotum (Figs 425, 586). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base but slightly wider than apex, widest in middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, distinctly concave. Apical angles obtuse, rather projecting. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded or even obtuse, moderately produced posteriorly. Base in middle markedly convex, near basal angles moderately concave, not bordered. Surface near base with rather distinct transverse impression. Lateral margin on and below border with rather sparse, fairly short setae. Microreticulation present on disk, though very fine, difficult to detect, isodiametric, absent on marginal explanation, puncturation coarse, though at apex distinctly finer, very dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, densely packed. Surface rather densely and moderately elongately pilose, dull, highly coriaceous.

Elytra (Figs 425, 585). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders barely excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on and below border with elongate setae. Series of umbilical pores consisting of c. 3-4 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as extremely shallow furrows and slight vermicular ridges. Microreticulation distinct, though fine, rather superficial, isodiametric, puncturation dense and very coarse, even much coarser than on pronotum, less coarse near scutellum, at apex, and laterally. Punctures slightly elongate, deeply impressed, with sharp margins. Shoulders extensively punctate. Apex and lateral part rather densely punctate. Surface rather sparsely and shortly pilose, moderately glossy.

Lower surface. Prosternal process rather short, very convex, rather carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, slightly <2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia rather wide. Metatibia rather short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus c. 1.2-1.3 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 248e-k). Genital ring moderately wide, convex, barely asymmetric, with rather short apex, rather large, slightly asymmetric, moderately excised base. Basal margin on left side slightly sinuate. Sternum VII comparatively wide, apically straight, slightly oblique, with deep and short excision, base deeply concave, basal angles rounded, lateral parts rather short. Aedeagus moderately elongate, depressed, in middle moderately widened, near apex on left side faintly concave, slightly asymmetric. Basal part long, markedly bent. Lower surface gently convex. Apex moderately



Figs 248a-m. *Cainogenion* (s. str.) *parumpilosum*, spec. nov. Details of head and genitalia. For legends see fig. 239.

wide, obtusely rounded, faintly asymmetric. Orifice rather elongate, internal sac moderately complex. Right paramere fairly elongate, evenly tapering, with rounded apex, left paramere considerably larger than right, triangular, with gently rounded apex, moderately striped.

♀ genitalia (Figs 248l,m). Sternum VIII laterally obtuse, basal process rather wide and short. Stylomere moderately wide, with attenuate, obliquely rounded apex, median border in middle slightly concave, lateral border gently convex, apex with 1 elongate apical seta. Lateral plate very elongate, with 3 elongate apical setae.

Variation. Due to limited material little variation noted, apart from some differences in relative length of elytra, size of elytral pattern, and density of pilosity of clypeus, lateral margin of head, and labrum.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Both known specimens collected by me under bark of a river gum together with specimens of the genus *Adelotopus* and by small ants of the genus *Crematogaster* Lund. So far captured in June only.

Distribution (Fig. 651). Northern inland Queensland. Known only from type locality.

Material examined (2). Only the holotype and one paratype.

Etymology. The name refers to the sparse pilosity of the surface.

Cainogenion tropicum, spec. nov.

Figs 249, 426, 587, 588, 652

Types. Holotype: ♂, Townsville, Qld 23.10.02 F. P. Dodd (ANIC). – Paratypes: 1♀, Brisbane, Q. Jan 1950 C. Oke, *Cainogenion subopacum* Macl., det. *obscurum* (NMV); 2♀♀, 10506, Godeffroy Collection, *Adelotopus subopacus* (W.M.L.) Rockhampton (NMV); 1♀, 10506, *subopacus* M.L. Rockh., Ex Musaeo L. Fairmaire 1896 (MNHN); 1♀, 10506, Ex Musaeo L. Fairmaire 1896 (MNHN); 1♂, 3 X 21, Clermont Queensland Dr. K. K. Spence, *Adelotopus obscurus* Cast. Id. by A. M. Lea (AMS); 1♀, Clermont Queensland Dr. K. K. Spence, det. *obscurum* (AMS);

17♂♂, 1♀, Australia: Queensland, 10 mi sw Townsville, 50 m 12 November 1962, E Ross & D Cavagnaro (CAS, CBM); 1♂, 2♀♀, Queensland: 10 mi S.W. Townsville, 50 m, 12-XI-62 E. S. Ross & D. Q. Cavagnaro (CAS); 1♂, 2♀♀, Townsville, Qld 21.9.02 F. P. Dodd (MNHN); 1♀, Queensland F. P. Dodd 1903-356, *Adelotopus* sp. ? Id. by T. G. Sloane, Townsville, Qld 30.9.02 F. P. Dodd, det. *obscurus* (BMNH); 2♂♂, Townsville, Qld 3.10.02 F. P. Dodd, 7673 *Adelotopus* Queensland (SAMA); 1♂, Townsville, Qld 7.10.02 F. P. Dodd, Queensland, F. P. Dodd 1903-356, det. *obscurum* (BMNH); 3♂♂, 1♀, Townsville, Qld 14.10.02 F. P. Dodd, G. Bryant Coll. 1919-147, det. *obscurus* (BMNH); 1♀, Townsville, Qld 14.10.02 F. P. Dodd (ANIC); 1♀, Townsville, Qld 23.10.02 F. P. Dodd, G. Bryant Coll. 1919-147, det. *obscurum* (BMNH); 1♂, Townsville, Qld Oct. 02 F. P. Dodd, 1539, Griffith Collection Id. by A. M. Lea (SAMA); 8♂♂, 7♀♀, Townsville Queensland, G. Bryant Coll. 1919-147, det. *obscurum* (BMNH, CBM); 1♂, Townsville Queensland, G. Bryant Coll. 1919-147, *Cainogenion obscurum* Cast. (FMT); 1♂, Townsville, Qld Oct. 02 F. P. Dodd, G. Bryant Coll. 1919-147, det. *obscurum* (BMNH); 1♀, Townsville, Qld 17.12.02 F. P. Dodd, G. Bryant Coll. 1919-147, det. *obscurus* (BMNH); 1♂, 3♀♀, 1537 Q, Townsville Q'd Dodd, *Adelotopus* Q'd 1537; *Adelotopus* Qd. 2983, not *subopacus*, Griffith Collection Id. by A. M. Lea (SAMA); 2♂♂, 1♀, 1537, Townsville Queensland Dodd X ?, Grif's 1537, ?, 7673, 1915 8 *Adelotopus* Queensland (SAMA); 1 (sex ?), Townsville, Qld F. P. Dodd (ANIC); 1♂, 1♀, Australia: Mt. Garnet N. Q. 8.XI.88 B. P. Moore, under Euc. bark (CMC); 1♀, Mt. Garnet Dodd '03 (ANIC); 2♀♀, Watten Queensland F. H. Taylor (ANIC); 1♂, 2♀♀, Queensland F. P. Dodd 1903-356, det. *obscurum* (BMNH); 1♂, Hist.-Coll. Nr. 43868 Thorey, det. *obscurus* (MNHB); 1♀, 57651, det. *obscurus* (MNHB).

Diagnosis. Medium-sized to fairly large, wide, reddish-piceous species with conspicuous spot on elytral disk, a fringe of short setae on the margins of pronotum and elytra, barely concave surface of clypeus, dense and coriaceous puncturation, and absence of pilosity. Further distinguished by conspicuous ridges near lateral margin of head and on clypeus, absence of setae at the margin of clypeus, and symmetric aedageus with narrow, very shortly rounded apex.

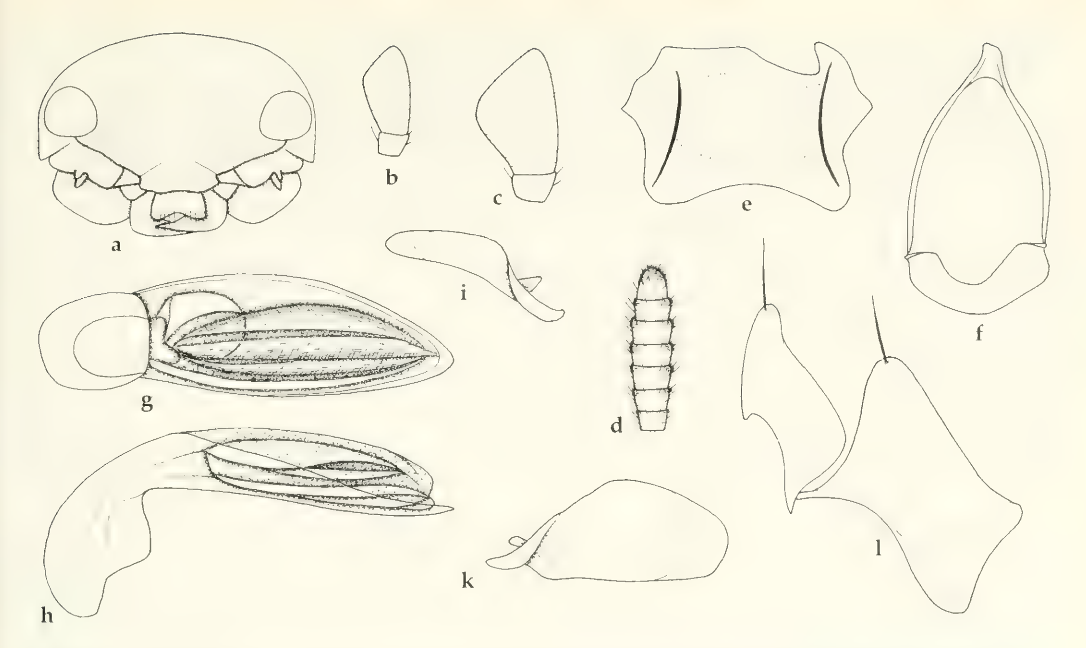
Description

Measurements. Length: 5.0-7.0 mm. Ratios. Width/length of pronotum: 1.68-1.78; width pronotum/head: 1.66-1.78; length/width of elytra: 1.49-1.56; length elytra/pronotum: 2.50-2.71.

Colour (Fig. 426). Reddish-piceous to piceous, all margins of pronotum and lateral margins of elytra more or less distinctly and rather widely reddish, disk of elytra conspicuously lighter. Lower surface reddish. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 249a-d). Rather short, fairly wide, frons slightly convex. Eyes moderately large. Lateral border of head somewhat irregular, almost straight, angulate, though without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly square with obtusely rounded anterior border, then moderately deeply incised, behind this incision with short, obtuse tooth-like process, inner wall of cavity smooth. Clypeal suture complete or almost so. Clypeus not concave, rather short, about square, margin in middle faintly bisinuate or irregularly straight, without any setae. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather short, apex rather concave, with c. 8 elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, triangular, apex rather acute. Wings of mentum narrow and elongate, apex acute. Glossa rather narrow, elongate, apically rounded, at border with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather short and wide, in middle slightly widened. Terminal palpomere of labial palpus widened, moderately securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border convex, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.9-2 × as wide as long. Microreticulation present, though difficult to detect, because puncturation dense and coarse, very rugose, punctures deeply impressed and very closely packed. Surface near lateral margins of head and on clypeus with several conspicuous, irregular ridges, impilose, dull, coriaceous. Lateral margin of head without setae, lateral border of suborbital lamina with one or two short setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate impilose. Gula impilose.

Pronotum (Figs 426, 588). Wide, in middle convex, lateral margins widely explanate, foliaceous. Base distinctly wider than apex, widest about in middle. Apex in middle excised, though convex, rather strongly produced near eyes, laterally oblique, distinctly concave. Apical angles obtuse or rounded, moderately projecting. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly rounded or even obtuse, slightly produced posteriorly. Base in middle markedly convex, near basal angles moderately concave, not bordered. Surface near base with very inconspicuous transverse impression. Lateral margin on border border with rather sparse, fairly short setae, below border with



Figs 249a-l. *Cainogenion* (s. str.) *tropicum*, spec. nov. Details of head and genitalia. For legends see fig. 239.

denser, more elongate setae. Microreticulation present on disk, though very fine, difficult to detect, isodiametric, absent on marginal explanation, puncturation fairly coarse, though at apex distinctly finer, dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, densely packed. Surface im pilose, dull, coriaceous.

Elytra (Figs 426, 587). Rather elongate, moderately convex, depressed on disk, rather parallel. Lateral borders faintly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel rather wide, not concealed. Basal border line absent. Lateral margin on border with rather short and sparse setae, below border with more elongate setae. Series of umbilical pores consisting of c. 3-6 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, though traces of striation visible as extremely shallow furrows and slight vermicular ridges. Microreticulation distinct, though fine, somewhat superficial, isodiametric, puncturation very dense and fairly coarse, coarser than on pronotum, less coarse near scutellum, at apex, and laterally. Punctures slightly elongate, deeply impressed, with sharp margins. Shoulders extensively punctate. Apex and lateral part rather densely punctate. Surface impilose, moderately dull.

Lower surface. Prosternal process rather short, narrow, very carinate, evenly convex, apex passing over regularly from ventral surface, shortly setose. Metepisternum elongate, slightly >2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather sparsely punctate and setose.

Legs. Short, 1st tarsomere of protarsus almost 2 × as wide as long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia short, slightly >3 × as long as wide, 1st tarsomere of metatarsus c. 1.2 × as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 249e-k). Genital ring moderately wide, convex, barely asymmetric, basal part almost parallel, with rather short apex, rather large, slightly asymmetric, deeply excised base. Basal margin on left side barely sinuate. Sternum VII comparatively wide, apically straight, with deep and rather elongate excision, base deeply concave, basal angles rounded, lateral parts rather short. Aedeagus moderately elongate, depressed, in middle moderately widened, symmetric. Basal part long, markedly bent. Lower surface gently convex. Apex rather narrow, very shortly rounded, symmetric. Orifice rather elongate, internal sac moderately complex. Right paramere elongate, narrow,

with rounded apex, left paramere considerably larger than right, slightly triangular, with rather transversely cut apex, moderately striped.

♀ genitalia (Fig. 249l). Sternum VIII laterally acute, basal process rather narrow and elongate. Stylomere fairly wide, with attenuate, rounded apex, median border in middle distinctly concave, lateral border gently convex, apex with 1 elongate apical seta. Lateral plate elongate, with 1-2 elongate apical setae.

Variation. Apart from some differences in size and pattern rather little variation noted.

Vivipary. Confirmed by discovery of larvae in the ♀ ovidsucts.

Habits. Largely unknown. Single specimens collected "under Euc. bark", the holotype mounted together with ant of the genus *Crematogaster* Lund on same card. Dated specimens captured from September to November and in January, though many specimens not dated.

Distribution (Fig. 652). Eastern Queensland north to southwestern border of Atherton Tabelland.

Material examined (79). Only the type series.

Etymology. The name refers to the distribution.

Cainogenion glabratum, spec. nov.

Figs 250, 427, 589, 590, 652

Types. Holotype: ♀, Quorn, S. A. (SAMA).

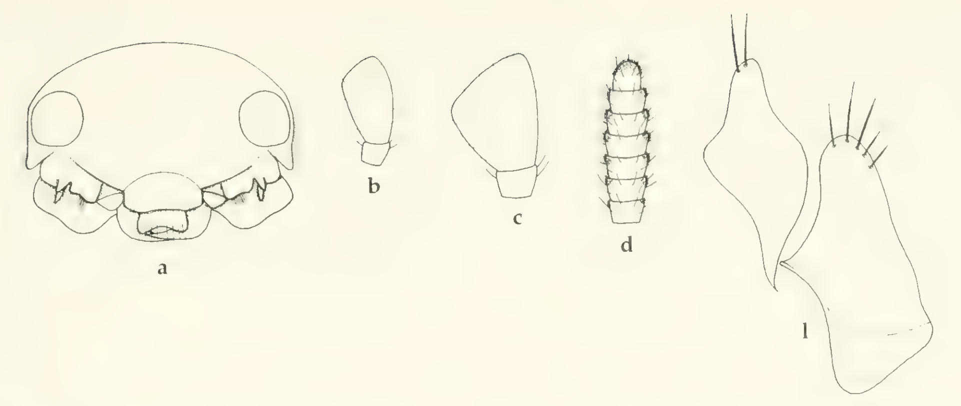
Diagnosis. Fairly large, rather narrow, almost unicolourous reddish species without a fringe of setae on the margins of pronotum and elytra, with straight surface of clypeus, very fine and sparse puncturation on head, though coarse but rather sparse, not coriaceous puncturation on pronotum and elytra, and absence of pilosity. Further distinguished by finely and densely striolate surface of head, almost not explanate lateral margin of pronotum, absence of puncturation on shoulders, apex and on a sublateral stripe of elytra. Further distinguished from the most closely related *C. depressum*, spec. nov. by narrower, more convex pronotum with slightly produced basal angles, longer, more convex and less depressed elytra with partly concealed marginal channel, and wider stylomere.

Description

Measurements. Length: 6.7 mm. Ratios. Width/length of pronotum: 1.54; width pronotum/head: 1.57; length/width of elytra: 1.64; length elytra/pronotum: 2.49.

Colour. Light reddish, disk of elytra even faintly lighter, apex slightly infuscate. Lower surface reddish. Mouth parts, antenna and legs reddish, tibiae and tarsi slightly darker.

Head (Figs 250a-d). Rather short, fairly wide, frons evenly convex. Eyes moderately large. Lateral border of head somewhat angulately convex, without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly oblique with wide, angulate anterior angle, then moderately deeply incised, behind this incision with rather elongate, wide tooth-like process, inner wall of cavity smooth. Clypeal suture complete, very conspicuous. Clypeus not concave, about square, margin in middle faintly sinuate, laterally slightly oblique, with some short setae. Labrum separated from clypeus by deep furrow, directed obliquely anterior-ventrally, rather short, apex faintly concave, with c. 10 moderately elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth very elongate, triangular, apex slightly obtuse. Wings of mentum fairly narrow and elongate, apex obtuse. Glossa rather narrow, elongate, apically rounded, at border apparently with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather narrow, in middle faintly widened. Terminal palpomere of labial palpus widened, moderately securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border convex, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.9-2 × as wide as long. Microreticulation extremely fine, dense, puncturation sparse and fine, visible only on vertex. Surface with many very fine, mostly longitudinal rugosities, impilose, very dull, though not coriaceous. Lateral margin of head in middle with few elongate setae, lateral border of suborbital lamina with some elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate impilose. Gula impilose.



Figs 250a-d, l. *Cainogenion* (s. str.) *glabratum*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 239.

Pronotum (Figs 427, 590). Comparatively narrow, highly convex, lateral margins not explanate, only slightly chanelled. Base barely wider than apex, widest behind middle. Apex in middle slightly excised, though very convex, slightly produced near eyes, laterally very oblique, faintly concave. Apical angles rounded, barely projecting. Apex very faintly and irregularly bordered. Sides evenly convex, unbordered. Basal angles shortly rounded, slightly produced posteriorly. Base in middle but slightly convex, near basal angles slightly concave, not bordered. Surface near base without transverse impression. Lateral margin on border without setae, below border with fairly elongate setae. Microreticulation extremely fine, consisting of irregular transverse meshes or even transverse strioles, in middle highly superficial, in lateral parts distinct. Puncturation rather coarse, sparse, well spaced, laterally and near base even sparser, lateral parts widely impunctate. Punctures deeply impressed, though with convex margins. Surface impilose, laterally dull, in middle more glossy.

Elytra (Figs 427, 589). Elongate, highly convex, slightly depressed on disk and with an impression in anterior third, parallel. Lateral borders faintly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles rather widely rounded off. Shoulders evenly rounded. Marginal channel rather wide, though partly concealed. Basal border line absent. Lateral margin on border without setae, only shortly behind shoulders with some short setae, below border with more elongate setae. Series of umbilical pores consisting of c. 3 rather spaced pores behind shoulder. Setae rather elongate, pores more easily seen than in other species. Scutellar pore absent. Striae including sutural stria absent, no traces of striation visible. Microreticulation extremely fine, laterally distinct, on disk highly superficial, consisting of irregular transverse meshes and lines, puncturation sparse, coarse, coarser than on pronotum, near scutellum markedly fine. Punctures deeply impressed, though with rounded margins. Base and shoulders, apex, and a longitudinal lateral stripe impunctate, lateral margin again coarsely punctate. Surface impilose, laterally moderately dull, in middle fairly glossy.

Lower surface. Prosternal process rather short, fairly narrow, moderately convex, not carinate, evenly convex, apex passing over regularly from ventral surface, barely setose. Metepisternum elongate, slightly >2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface finely punctate and apparently very sparsely setose.

Legs. Short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia short, slightly >3 × as long as wide, 1st tarsomere of metatarsus c. 1.2-1.3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 250l). Sternum VIII laterally acute, basal process rather narrow and elongate. Stylomere rather wide in middle, with very attenuate, obliquely rounded apex, apex with 2 elongate apical setae. Lateral plate elongate, with 4-5 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype mounted with 4 ants of the genus *Crematogaster* Lund on same card. Date of capture unknown.

Distribution (Fig. 652). Southern central South Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the glabrous surface of pronotum and elytra.

Note. This species is certainly closely related to the following *C. depressum*, spec. nov. from southwestern Australia. Perhaps both are simply subspecies of one widespread species, but the final decision should await the discovery of males of both taxa, as well as additional material for settling the question of variability.

Cainogenion depressum, spec. nov.

Figs 72, 251, 428, 591, 592, 652

Types. Holotype: ♀, Coolgardie 29.8.58 W. A. J. C. Le Souef, F. E. Wilson Coll., *Cainogenion* sp. (NMV).

Diagnosis. Fairly large, rather wide, almost unicolourous dark reddish species without a fringe of setae on the margins of pronotum and elytra, with straight surface of clypeus, very fine and sparse puncturation on head, though coarse but rather sparse, not coriaceous puncturation on pronotum and elytra, and absence of pilosity. Further distinguished by finely and densely striolate surface of head, moderately explanate lateral margin of pronotum, absence of puncturation on shoulders, apex and on a sublateral stripe of elytra. Further distinguished from the most closely related *C. glabratum*, spec. nov. by wider, less convex pronotum with barely produced basal angles, shorter, less convex and more depressed elytra with not concealed marginal channel, and narrower stylomere.

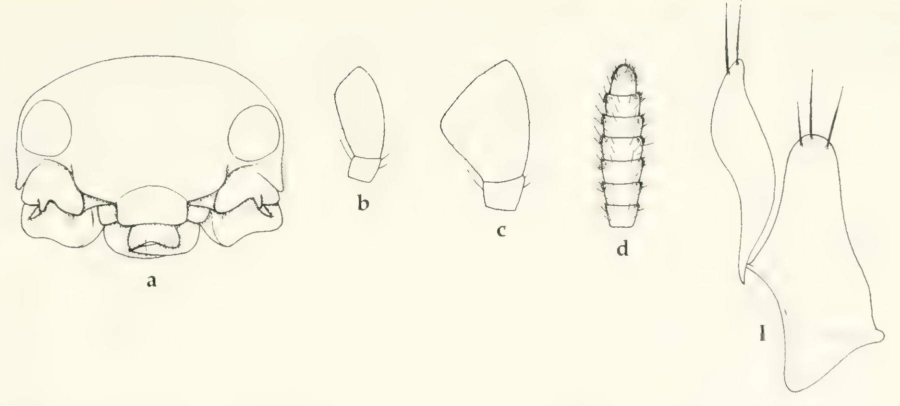
Description

Measurements. Length: 6.6 mm. Ratios. Width/length of pronotum: 1.59; width pronotum/head: 1.66; length/width of elytra: 1.54; length elytra/pronotum: 2.53.

Colour. Light reddish-piceous, disk of elytra faintly lighter, apex slightly infuscate. Lower surface light reddish-piceous. Mouth parts, antenna and legs reddish, tibiae and tarsi piceous.

Head (Figs 251a-d). Rather short, fairly wide, frons evenly convex. Eyes comparatively small. Lateral border of head somewhat angulately convex, without distinct ridge. Suborbital cavity rather deep, suborbital lamina anteriorly oblique with wide, angulate anterior angle, then moderately deeply incised, behind this incision with elongate, markedly protruding tooth-like process, inner wall of cavity smooth. Clypeal suture complete, very conspicuous. Clypeus not concave, about square, margin in middle faintly sinuate, laterally slightly oblique, with some short setae. Labrum separated from clypeus by deep furrow, directed obliquely anterior-ventrally, rather short, apex faintly concave, with 6 elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth very elongate, triangular, apex slightly obtuse. Wings of mentum fairly narrow and elongate, apex obtuse. Glossa rather narrow, elongate, apically rounded, at border apparently with c. 10 elongate setae. Paraglossae apparently fused to base of glossa, hence glossa halfways slightly widened, with 1 elongate seta. Terminal palpomere of maxillary palpus rather narrow, in middle faintly widened. Terminal palpomere of labial palpus widened, moderately securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border convex, angles widely rounded. Antenna moderately elongate, in middle slightly widened, 7th-8th antennomeres c. 1.8-1.9 × as wide as long. Microreticulation extremely fine, dense, puncturation sparse and fine, visible only on vertex. Surface with many very fine, mostly longitudinal rugosities, impilose, very dull, though not coriaceous. Lateral margin of head in middle with few elongate setae, lateral border of suborbital lamina with some elongate setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate impilose. Gula impilose.

Pronotum (Figs 428, 592). Moderately wide, convex, in midle somewhat depressed, lateral margins narrowly explanate, only slightly chanelled. Base distinctly wider than apex, widest behind middle. Apex in middle slightly excised, though very convex, slightly produced near eyes, laterally very oblique, faintly concave. Apical angles slightly angulate, moderately projecting. Apex unbor-



Figs 251a-d, l. *Cainogenion* (s. str.) *depressum*, spec. nov. Details of head ♀ and genitalia. For legends see fig. 239.

dered. Sides evenly convex, unbordered. Basal angles obtusely angulate, barely produced posteriorly. Base in middle slightly convex, near basal angles very faintly concave, unbordered. Surface near base without transverse impression. Lateral margin on border without setae, below border with fairly elongate setae. Microreticulation extremely fine, consisting of irregular transverse meshes or even transverse strioles, in middle more superficial, in lateral parts distinct. Puncturation rather coarse, sparse, well spaced, laterally and near base even sparser, lateral parts widely impunctate. Punctures deeply impressed, though with convex margins. Surface impilose, laterally dull, in middle more glossy.

Elytra (Figs 72, 428, 591). Rather elongate, convex, depressed on disk and with an impression in anterior third, parallel. Lateral borders faintly excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature almost straight, lateral apical angles rather widely rounded off. Shoulders evenly rounded. Marginal channel rather wide, almost not concealed. Basal border line absent. Lateral margin on border without setae, only shortly behind shoulders with some short setae, below border with more elongate setae. Series of umbilical pores consisting of 3 rather spaced pores behind shoulder, rather difficult to see. Scutellar pore absent. Striae including sutural stria absent, no traces of striation visible. Microreticulation very fine, on disk almost as distinct as laterally, consisting of irregular more or less transverse meshes and lines, puncturation rather sparse, coarse, coarser than on pronotum, near scutellum finer. Punctures deeply impressed, though with rounded margins. Base and shoulders, apex, and a longitudinal lateral stripe almost impunctate, lateral margin again coarsely punctate. Surface impilose, laterally moderately dull, in middle fairly glossy.

Lower surface. Prosternal process rather short, fairly narrow, rather convex, slightly carinate, evenly convex, apex passing over regularly from ventral surface, barely setose. Metepisternum elongate, c. 2 × as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface finely punctate and apparently very sparsely setose.

Legs. Short, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia short, slightly >3 × as long as wide, 1st tarsomere of metatarsus c. 1.2-1.3 × as long as wide. ♂ protarsus unknown.

♂ genitalia. Unknown.

♀ genitalia (Figs 251l). Sternum VIII laterally acute, basal process rather narrow and elongate. Stylomere rather narrow in middle, with very attenuate, obliquely rounded apex, apex with 2 elongate apical setae. Lateral plate elongate, with 2-3 elongate apical setae.

Variation. Unknown.

Vivipary. Not confirmed in the examined material.

Habits. Unknown. Holotype captured in August.

Distribution (Fig. 652). Interior of southwestern Australia. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the more depressed surface compared with the closely related and very similar species *C. glabratum*, spec. nov.

Note. For discussion of the relationships with the foregoing species, see note above under that species.

Cainogenion clypeale, spec. nov.

Figs 252, 429, 593, 594, 652

Types. Holotype: ♂, Cairns dist. F. P. Dodd, 7677 *Adelotopus* Queensland (SAMA).

Diagnosis. Medium-sized, wide, depressed, unicolourous dark piceous species with a fringe of short setae on the margins of pronotum and elytra, deeply concave surfaces of clypeus and frons, moderately coarse, but sparse puncturation on head, coarse and very dense, coriaceous puncturation on pronotum, and rather sparse puncturation on elytra, absence of pilosity, and very distinct microreticulation. Further distinguished by the very dull and coriaceous surface of head, alsmost completely rounded apical angles, but rectangular basal angles of pronotum, widely impunctate shoulders and apex of elytra, and rather short aedeagus with acute apex.

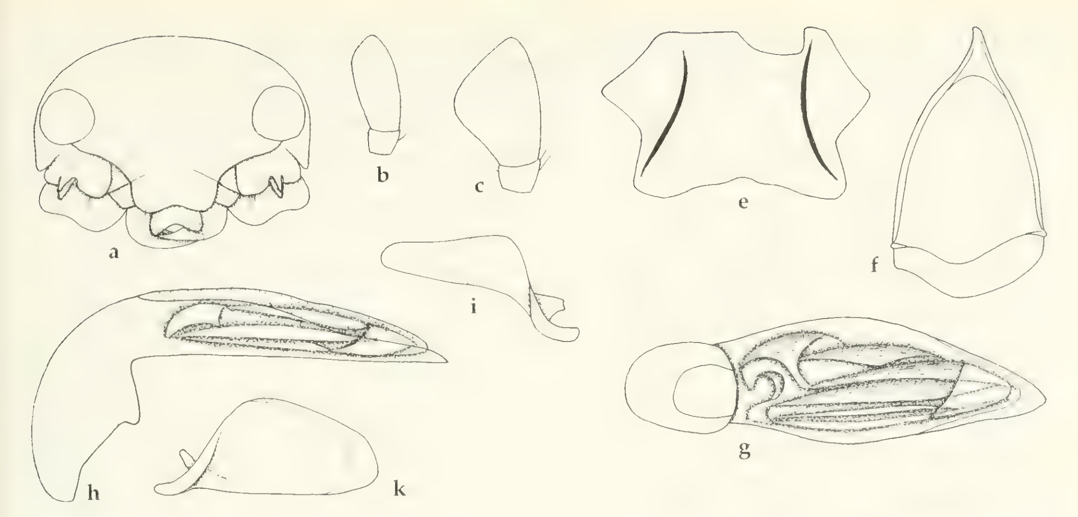
Description

Measurements (the pronotum is damaged on the left side, hence measurements are either impossible or somewhat arbitrary). Length: 6.0 mm. Ratios. Width/length of pronotum: ?; width pronotum/head: ?; length/width of elytra: c. 1.50; length elytra/pronotum: c. 2.55.

Colour. Dark piceous, head and pronotum even almost black, all margins of pronotum and lateral margins of elytra faintly reddish translucent. Lower surface reddish including mouth parts, antenna and legs piceous.

Head (Figs 252a-c). Rather short, fairly wide, frons barely convex, in middle even concave. Eyes comparatively large. Lateral border of head somewhat sinuate, angulate and with a distinct, slightly upturned ridge. Suborbital cavity rather deep, suborbital lamina anteriorly short, square, with obtusely rounded anterior border, then moderately deeply incised, behind this incision with very large, obtuse tooth-like process, inner wall of cavity smooth. Clypeal suture indistinct, in middle widely interrupted. Clypeus deeply concave, about square, laterally rounded, margin in middle rather concave, with 1 or 2 short setae on either side. Labrum separated from clypeus by very deep furrow, directed obliquely anterior-ventrally, rather elongate, apex deeply concave, with 6 elongate setae. Antennal groove very deep, laterally and posteriorly sharply bordered. Mental tooth large, elongate, triangular, apex rather acute. Wings of mentum moderately narrow and elongate, apex acute. Glossa rather narrow, elongate, apically rounded, at apex with c. 4 elongate setae. Paraglossae apparently fused to base of glossa, lateral margin of glossa with c. 4 elongate setae on either side. Terminal palpomere of maxillary palpus rather elongate, in middle slightly widened. Terminal palpomere of labial palpus widened, moderately securiform. Both palpi hirsute. Lateral plate of maxilla very large, lateral border concave, angles widely rounded. Both antennae broken from 2nd antennomere. Microreticulation very rough, though clypeus almost smooth, puncturation moderately fine, rather sparse, rugose, punctures deeply impressed and with sharp margins. Surface with some irregular rugosities, impilose, extremely dull, highly coriaceous. Lateral margin of head without setae, lateral border of suborbital lamina with some setae, behind suborbital ridge with a dense tuft of elongate hairs, ventral surface of maxillary plate impilose. Gula impilose.

Pronotum (Figs 429, 594). Rather wide, in middle convex, lateral margins but slightly explanate. Base distinctly wider than apex, widest behind middle. Apex in middle excised, though very convex, fairly produced near eyes, laterally oblique, barely concave. Apical angles almost evenly rounded, not projecting. Apex not bordered. Sides evenly convex, unbordered. Basal angles shortly angulate, almost rectangular, very faintly produced posteriorly. Base in middle markedly convex, near basal angles moderately concave, not bordered. Surface near base with inconspicuous transverse impression. Lateral margin on border with fairly short setae, below border with denser, more elongate setae. Microreticulation present on disk, though rather difficult to see within the very dense puncturation, isodiametric, absent on marginal explanation, puncturation rather coarse, though at apex finer, rugose,



Figs 252a-c, e-k. *Cainogenion* (s. str.) *clypeale*, spec. nov. Details of head and ♂ genitalia. For legends see fig. 239.

very dense, even near base, on lateral explanation sparser, punctures deeply impressed, with sharp margins, densely packed. Surface impilose, very dull, highly coriaceous.

Elytra (Figs 429, 593). Moderately elongate, rather wide, moderately convex, markedly depressed on disk, rather parallel. Lateral borders barely excised in anterior half, widest in middle, then slightly narrowed. Apex wide, transverse, truncature straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel wide, not concealed. Basal border line absent. Lateral margin on border in anterior half with rather short and sparse setae, below border with more elongate setae. Series of umbilical pores apparently consisting of c. 3-4 rather spaced pores behind shoulder. Setae rather elongate, pores, hovewever, extremely difficult to detect. Scutellar pore absent. Striae including sutural stria absent, no traces of striation visible. Microreticulation very distinct, though fine, about isodiametric, puncturation comparatively fine, moderately dense, but slightly coarser than on pronotum, less coarse near scutellum, at apex, and laterally. Punctures deeply impressed, with sharp margins. Shoulders very widely impunctate. Also apex and lateral part rather widely impunctate. Surface impilose, very dull.

Lower surface. Prosternal process rather short, narrow, highly convex, even fairly carinate, evenly convex, apex passing over regularly from ventral surface, elongately setose. Metepisternum elongate, slightly $<2\times$ as long as wide, posteriorly narrowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and setose.

Legs. Rather short, 1st tarsomere of protarsus almost $2\times$ as wide as long, tibial groove of profemur rather deep, anterior border oblique. Femur and tibia wide. Metatibia rather short, c. $3.5\times$ as long as wide, 1st tarsomere of metatarsus c. $1.3\times$ as long as wide. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 252e-k). Genital ring fairly wide, convex, barely asymmetric, with rather short apex, rather large, slightly asymmetric, slightly excised base. Basal margin on left side distinctly sinuate. Sternum VII comparatively wide, apically absolutely straight, with sudden, deep and rather elongate excision, base concave, basal angles rounded, lateral parts fairly elongate. Aedeagus moderately elongate, depressed, in middle rather widened, almost symmetric. Basal part long, markedly bent. Lower surface almost straight. Apex narrow, acute, symmetric. Orifice rather elongate, internal sac moderately complex. Right paramere fairly elongate, with widely rounded apex, left paramere considerably larger than right, slightly triangular, with obliquely rounded apex, moderately striped.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype not dated.

Distribution (Fig. 652). Northeastern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the deeply excavate clypeus.

7.5. Genus *Paussotropus* Waterhouse

Paussotropus Waterhouse, 1877, p. 3; Notman 1925, p. 5, 30; Csiki 1933, p. 1637; Darlington 1968, p. 240; Matthews 1980, p. 10; Moore et al. 1987, p. 61.

Type species: *Paussotropus parallelus* Waterhouse, 1877, by monotypy.

Diagnosis. Genus of Pseudomorphinae, delimited by following characters: Body narrow and elongate, dorsally rather depressed, elytra rather rectangular; whole surface with very coarse and dense puncturation; head still prognathous but directed downwards, rather deeply imbedded in prothorax; eyes situated laterally, without ventral border; clypeus completely divided from frons; labrum divided from clypeus and situated in an rectangular angle, not overlapped by the clypeus, bisetose; supraorbital, preorbital, suborbital, mental, and gular setae absent; antennal grooves deep but rather short, medio-ventrally widely overlapped by the very large, foliaceous lateral plate of maxilla; lateral border of head below eyes with a circular, hollowed suborbital cavity that is completely surrounded by sharp edge; antenna short, moniliform; glossa short and wide, with many short setae; paraglossa fused to glossa, almost as long; lateral plate of maxilla very large, voluminous, on upper surface with a attached tuft of setae and large, not sclerotized, glandular areas; labial palpi modetrately securiform; ventral surface of head rather short, partly concealed by the mouth parts; prosternal process very short, between procoxa depressed; umbilical pores of elytra apparently absent; femora and tibiae markedly compressed, foliaceous, femora with deep grooves; tarsi extremely short and stout; ♂ sternum VII not excised; sternum VIII not divided, highly asymmetric; aedeagus parallel, with wide, rounded apex and with moderately complicately folded internal sac; parameres fairly similar, though left paramere considerably larger; ♀ stylomeres 1 and 2 fused, foliaceous; no distinct dorsal ensiform seta, ventral ensiform setae, and nematiform setae present, but with variable number of apical or subapical setae on medio-apical surface not arising from a pit.

Larva. 1st instar larva of the single species known.

Distribution. Australia. A single species so far known.

Systematic position. It is the adelphotaxon of *Cainogenion* and is in most respects apomorphic.

7.5.1. Description of *Paussotropus*

For full description of genus *Paussotropus* see description of the single species *P. cylindricus* (Chaudoir).

7.5.2. The species of *Paussotropus* Waterhouse

***Paussotropus cylindricus* (Chaudoir, 1862) (new combination)**
Figs 1, 73, 97, 253-260, 430, 595, 653

Adelotopus cylindricus Chaudoir, 1862, p. 490; Castelnau 1867, p. 33; 1868, p. 119; Blackburn 1901a, p. 19.
Cainogenion cylindricum, Notman 1925, p. 11, 30; Csiki 1933, p. 1637; Matthews 1980, p. 10; Moore et al. 1987, p. 53.
Paussotropus parallelus Waterhouse, 1877, p. 3; Notman 1925, p. 30; Csiki 1933, p. 1637; Matthews 1980, p. 10; Moore et al. 1987, p. 61 (**new synonymy**).

Types. Of *cylindricus*. Lectotype (by present designation). ♀, HOLOTYPE, Ex Musaeo Chaudoir, Australia Melbourne Stevens, *Adelotopus cylindricus* Chaudoir (MNHN).

Of *parallelus*. Lectotype (by present designation). ♀, TYPE, Batchian, Bowring 63.47*, *Paussotropus parallelus*, (Type). C. Waterh. (BMNH).

Type localities. Of *cylindricus*: "Melbourne", Victoria. – Of *parallelus*: "Batchian".

Note. The synonymy of both species was confirmed by the comparison of the types. Already Matthews (1980) expressed the opinion that both names are synonymous, but he had no access to the types and thus, was not able to pursuit his idea.

The type locality of *P. parallelus* is certainly wrong.

Diagnosis. Because only a single species is so far known, the species diagnosis fully corresponds to the generic diagnosis.

Description

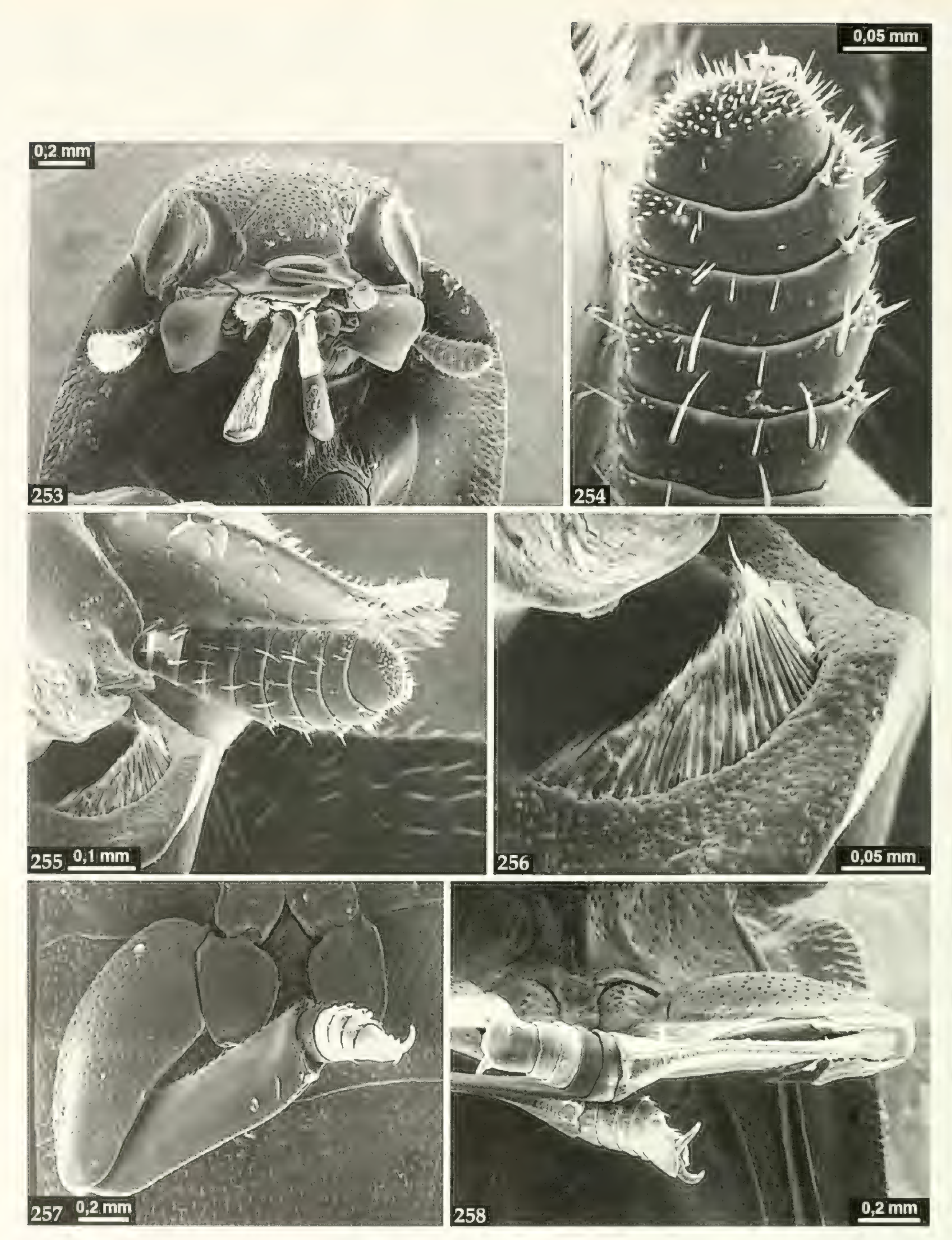
Measurements. Length: 5.0-6.3 mm. Ratios. Width/length of pronotum: 1.32-1.43; width pronotum/head: 1.45-1.59; length/width of elytra: 1.92-2.01; length elytra/pronotum: 2.65-2.86.

Colour. Dark yellowish to light reddish-piceous, lower surface yellowish, legs reddish, tarsi slightly darker.

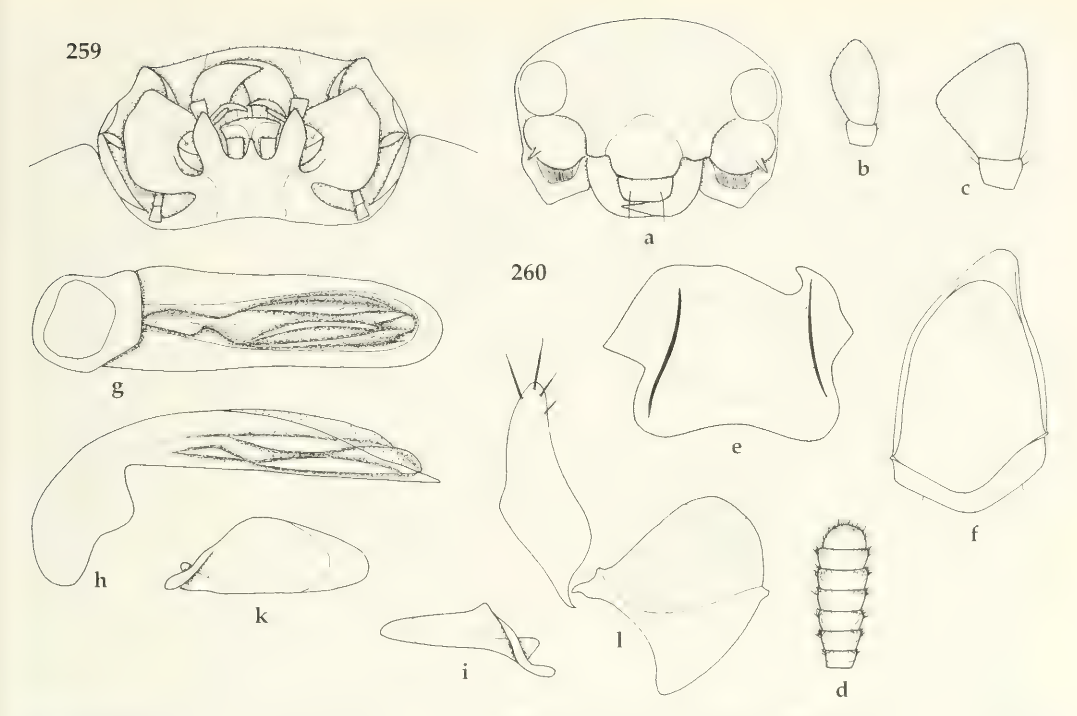
Head (Figs 253-256, 259, 260a-d). Short, fairly wide, frons slightly convex. Lateral border of head just below eye with a remarkable, circular, hollowed lamina that is anteriorly and posteriorly surrounded by a sharp edge and bears ventrally a acute tubercle. It corresponds to the subocula lamina of *Cainogenion,* but is completely surrounded by sharp ridges. Inner wall of cavity smooth. Clypeal suture distinct, complete, slightly triangular. Clypeus convex, anterior margin slightly convex, without any setae. Labrum separated from clypeus by a furrow, situated in a right angle with clypeus, directed obliquely anterior-ventrally, wide, apex convex, bisetose. Mandible basally wide, external margin obtusely bent, almost evenly curved. Antennal groove extremely deep, laterally and posteriorly sharply bordered, these borders even laminate. Mental tooth large, elongate, triangular, apex rather obtuse. Wings of mentum narrow and elongate, apex acute. Glossa wide and short, lower surface carinate, apex wide, gently convex, with several short setae. Paraglossae fused to glossa, almost as long as glossa. Terminal palpomere of maxillary palpus rather elongate, but markedly depressed, considerably narrowed towards apex. Terminal palpomere of labial palpus widened, slightly securiform. Both palpi hirsute. Lacinia small, strongly bent, outer angles angulate. Lateral plate of maxilla very large and voluminous, ventrally convex, lateral border slightly concave, outer angle obtusely angulate. Upper surface anteriorly with a tuft of hairs attached to a conical boss, posteriorly with two conspicuous yellow glandular areas, where sclerotization of surface is weak. Antenna short and wide, widened towards apex, median antennomeres >3 × as wide as long. Lateral margin of terminal antennomeres with a glandular area. Microreticulation present, though indistinct within the coarse and dense puncturation, punctures deeply impressed and with sharp margins, rather rugose. Surface shortly and densely pilose, moderately glossy, slightly coriaceous. Gula sparsely pilose.

Pronotum (Fig. 430). Wide, somewhat trapeziform, disk highly convex, lateral margins slightly explanate. Base narrower than apex, widest shortly behind apex. Apex in middle deeply excised, though fairly convex, markedly produced near eyes, laterally oblique and convex. Apical angles about rectangular though obtuse, markedly projecting. Apex not bordered. Sides gently oblique and slightly convex, finely bordered. Basal angles rectangular, but the very angles evenly rounded off. Base in middle strongly convex, not bordered. Surface near base with deep but irregular transverse impression. Median line widely and rather deeply impressed, fairly irregular, hence disk rather irregularly convex. Lateral margin on border with a fringe of short setae, below border with denser, more elongate setae. Microreticulation present though indistinct within dense puncturation, puncturation moderately coarse, dense, finer and sparse at lateral explanations, rather rugose. Surface with dense, short pilosity, moderately glossy.

Elytra (Figs 430, 595). Elongate, moderately convex, depressed on disk, parallel. Lateral borders slightly sinuate in anterior third, widest in middle, then narrowed. Apex wide, oblique, drawn inside, truncature almost straight, lateral apical angles widely rounded off, in middle slightly dehiscent. Shoulders evenly rounded. Marginal channel anteriorly moderately wide, partly concealed, in posterior third completely reduced. Basal border line absent. Lateral margin on border with a fringe of short setae, below border with more elongate setae. Series of umbilical pores virtually invisible within the puncturation. Scutellar pore absent. Striae including sutural stria absent, no traces of striation visible. Suture slightly raised, disk near suture gently depressed, whole surface rather irregular. Microreticulation indistinct, superficial, puncturation coarse and very dense, slightly coarser than on pronotum, punctures with fairly sharp margins. Whole surface almost regularly punctate. Surface with short but rather dense pilosity, moderately glossy.



Figs 253-258. *Paussotropus cylindricus* (Chaudoir). **253.** Frontal view of head. **254.** Apex of antenna. **255.** Lateral plate of maxilla, right antenna, and lateral plate of labium. **256.** Glandular organ on upper surface of lateral plate of labium. **257.** Ventral view of right posterior leg. **258.** Posterior view on left median leg.



Figs 259-260. *Paussotropus cylindricus* (Chaudoir). **259.** Ventral view of head. **260a-l.** Details of head and genitalia. For legends see fig. 239.

Lower surface. Prosternal process short, narrow, posteriorly rather carinate, ventrally depressed, laterally markedly bordered, shortly pilose. Metepisternum very elongate, >3 × as long as wide, posteriorly slightly narrowed, neither bent nor hollowed. Abdominal sterna without elongate setae. Lower surface rather densely punctate and pilose.

Legs (Figs 257, 258). Short and remarkably wide and depressed. Both, femora and tibia extremely widened and depressed, foliaceous. Tarsi very short and thick. 1st tarsomere of protarsus c. 2 × as wide as long, tibial grooves of profemur deep, anterior border deeply excised, posterior border widely laminate. All tibiae rectangular, parallel, c. 3 × as long as wide. Tarsomeres apart from 5th 2-3× as wide as long, rather cylindrical. ♂ protarsus not widened, not squamose.

♂ genitalia (Figs 260e-k). Genital ring fairly wide, convex, rather asymmetric, with slightly bent apex, rather short, slightly asymmetric, deeply excised base. Sternum VII comparatively wide, apically evenly convex, with rather deep and elongate excision, base deeply concave, basal angles rounded, lateral parts fairly elongate. Aedeagus rather short, depressed, wide and almost completely parallel, symmetric. Basal part long, markedly bent. Lower surface straight. Apex very wide, almost evenly rounded, symmetric. Orifice fairly elongate, internal sac moderately complex. Both parameres elongate, with rounded apex, left paramere considerably larger than right, slightly triangular, very faintly striped.

♀ genitalia (Fig. 260l). Sternum VIII elongate, laterally obtusely angulate, basal process elongate. Stylomere rather narrow, with attenuate, shortly rounded apex, apex with 4-5 elongate apical setae. Lateral plate short, divided in a membraneous and a sclerotized part, without apical setae.

Variation. Some variation of size, of shape and relative length of pronotum and elytra, and of degree of puncturation and pilosity of surface noted. Otherwise a very characteristic and homogeneous species.

Vivipary. Confirmed by discovery of larvae in the ♀ oviducts.

Habits. Largely unknown. Single specimens collected "under bark" and on "Ridge Paddock, on surface of the soil". So far captured From October to January and in April and May, but most specimens undated. This species has been rather rarely collected recently.

Distribution (Fig. 653). All mainland states, though real distribution little known, because many specimens are undated or bear only state records. The record from the Moluccas is certainly wrong.

Material examined (35). **SA:** 1♀, Adelaide Pulleine, Jan, Griffith Collection Id. by A. M. Lea (SAMA); 1♀, Adelaide, Coll. Castelnau (MCSN); 1 (?sex), Adelaide Hart, Sharp Coll., Same as Waterhouse's gen. *Scolyto.* ? (BMNH); 1♂, Ardrossan, 19156 *Adelotopus cylindricus* Chd. (SAMA); 1♀, Ardrossan, J. G. O. Tepper (SAMA); 1♀, Greenock, CNHM 1955, Carl Brancsik Coll. Ex Eduard Knirsch, *Cainogenion* sp? det. D. Shpeley 1987 (FMNH); 1♀, Gawler (SAMA); 1 (?sex), 28, Howitt Collection, det. *cylindricus* (NMV); 1 (?sex), det. *cylindricum* (NMV). – **Vic:** 1♀, Melbourne Stevens, lectotype! *Adelotopus cylindricus* Chaudoir (MNHN); 1♂, Sea Lake J. C. Goudie, *Adelotopus cylindricus* Ch(aud). Id. by T. G. Slo(ane), J. C. Goudie Coll. (NMV); 1♀, Gypsum, May 1929, C. Oke, *Cainogenion cylindricum* Chaud. (NMV); 1♀, Gypsum, 25.XII.59, C. Oke, det. *cylindricum* (NMV); 1♂, Caranby, 13.I.87 Tepper (SAMA); 1 (?sex), 27/67, Fry Coll. (BMNH). – **NSW:** 1♂, Armst. 1947, J. G. Brooks Bequest, 1976 (ANIC); 1♂, Logan R. 19., J. Sedlacek Collector (CSB); 1♂, Culcairn, E. W. Ferguson Collection, *Adelotopus cylindricus* Chaud. W. K. Hughes det. (ANIC); 1♂, Gunning (MMS); 1♀, Westl. Riverina Wait leg., Lüddemann det. (DEIB); 1 (?sex), 7199, *A. cylindricus*, 7199 *Adelotopus cylindricus* Chd. N. S. Wales (SAMA). – **QLD:** 1 (?sex), Wittenbarra Stn., 6.V.73, B. Watson (ANIC). – **NT:** 1 (?sex), IV.71, J. Sedlacek Collector (CSB). – **WA:** 2♂♂, 1♀, Mindaroo Stn. via Onslow, 29.X.-12.XI.1983, D. Forrest coll. (ANIC, CBM); 1♀, Fortescue R. Hamersley Range N.W.A.: W. D. Dodd, 7674 *Adelotopus* (SAMA); 1♀, Du Boulay, New. Holl. occid., Fry Collection (BMNH); 1 (?sex), N. W. N. Holl., Janson Acq. 1884 (MNHN); 1 (?sex), Ex Musaeo H. W. Bates 1892 (MNHN); 1♂, (OUM). – **Moluccas:** 1♀, Batchian, lectytype! *Paussotropus parallelus* Waterh. (BMNH). – **?:** 1♀, Moorilla 4.XI. HJC, H. J. Carter Coll., *Adelotopus cylindricus* Chaud. (NMV); 1♂, 27, Howitt Coll., det. *cylindricum* (NMV); 1♀, *cylindricus*, Coll. Castelnau (MCSN); 1♀, Coll. Castelnau (MCSN).

7.6. Genus *Cryptocephalomorpha* Ritsema

Cryptocephalomorpha Ritsema, 1875, Versl. p. XCII; Notman 1925, p. 12, 30; Csiki 1933, p. 1637; Darlington 1968, p. 242.

Type species: *Cryptocephalomorpha gaverei* Ritsema, 1875, by monotypy.

Diagnosis. Genus of Pseudomorphinae, delimited by following characters: Size small, body cylindrical or slightly depressed on disk, elytra posteriorly evenly convex; head somewhat orthognathous; eyes situated laterally, without ventral border, ventral part more or less triangular; clypeus partly or completely fused to frons; anterior border of head far protruding over mouth parts; labrum not visible, deeply concealed below anterior border of head; mandible very small, partly concealed; supraorbital, preorbital, clypeal, suborbital, and gular setae absent; antennal grooves deep; lateral plate of maxilla very small; antenna moderately elongate to very short; mental tooth small, triangular; glossa fused with paraglossae to a wide plate, polysetose; labial palpi very large, markedly securiform; ventral surface of head rather short, partly concealed by the mouth parts; base of pronotum completely concealing scutellum and base of elytra; prosternal process elongate, narrow, laminate; elytra without striation; number of umbilical pores of elytra more or less reduced; femora moderately or strongly compressed, with deep grooves; tibiae feebly compressed, tarsi rather short; all tarsi in both sexes biseriately clothed to a different degree; ♂ sternum VII not excised; in both sexes sternum and tergum VII very large, semicircular at apex; ♂ sternum VIII symmetric; aedeagus with simply folded internal sac; parameres with a membraneous upper part; ♀ stylomeres 1 and 2 separated, very elongate; no distinct dorsal and ventral ensiform setae present, but nematiform setae present though short; ♀ tergum VIII consisting of narrow sclerites and of a variably shaped basal plate.

Larvae. Unknown.

Distribution. So far 6 species are known from northern Australia, New Guinea, Solomon Islands, Southeastern Asia from Singapore to Vietnam and to the Greater Sunda Islands, and South Africa.

Systematic position. Despite of the many autapomorphies of *Cryptocephalomorpha*, its systematic position is not fully settled. Probably it is the adelphotaxon of the *Adelotopus-Cainogenion-Paussotropus*-lineage. But perhaps it could even constitute a rather independent lineage within Pseudomorphinae that has convergently evolved several character states comparable to those within the main lineage.

7.6.1. Description of *Cryptocephalomorpha*

Species of *Cryptocephalomorpha* exhibit the following character states:

Size and shape. Small species (3.0-4.7 mm) of moderately to rather elongate, very convex to somewhat depressed form.

Colour and pattern (Figs 431-436). Surface either with a large, more or less well delimited reddish spot in apical half of elytra, or more or less unicolourous light reddish to light piceous with or without lighter fore body. Always basal margin of pronotum and lateral margin, apex, and suture of elytra slightly lighter. Ventral surface usually slightly lighter than dorsal surface. Mouth parts, antennae, and legs mostly coloured like lower surface, tibiae and tarsi commonly slightly darker.

Microsculpture (Figs 596-601). Dorsal surface with or without isodiametric microreticulation. Puncturation variable, almost invisible to rather coarse. Puncturation of head usually finer than on pronotum and in particular on elytra. Elytral striae absent. Surface without pilosity. Orbits with a group of short to fairly elongate setae. Rarely anterior half of lateral margins of elytra with a fringe of fairly elongate setae.

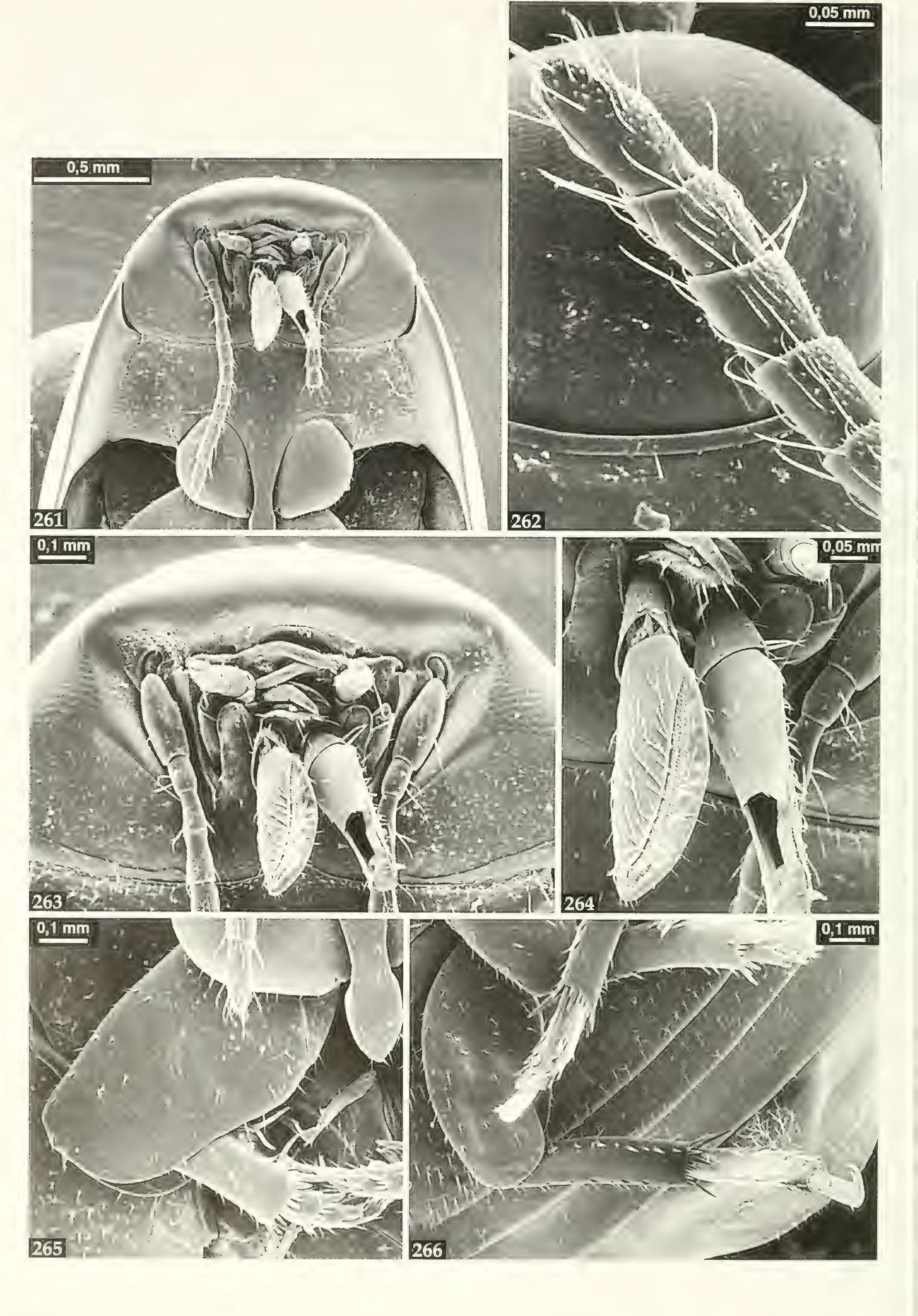
Head (Figs 261-264, 267-274). Rather short and wide, according to size of eyes, always very deeply imbedded in prothorax. Mouth parts directed anterior-ventrally. Surface of frons more or less distinctly convex. Eyes variable, ventrally without border, but triangularly prolonged onto lower surface of head, laterally not at all protruding, either facing anteriorly or more laterally. Anterior margin of head convex, far surpassing mouth parts. Clypeus fused to frons, clypeal suture almost invisible. Labrum not visible. Mandibles very small, deeply concealed below anterior margin of head, outer surface either regularly curved, or with deep excision and sharp spine. Mentum not divided from submentum by a suture, with small, more or less acute, triangular tooth, that is mostly concealed by the bases of the huge labial palpi. Gula rather short. Glossa completely fused with paraglossae, large or rather small, more or less tongue-like, directed ventro-posteriorly, sharply keeled below, margin with variable number (c. 10-16) of elongate setae, dorsal surface impilose. Wings of mentum moderately elongate, laminate, usually rather convex. Labial palpus very large, terminal palpomere huge, always distinctly securiform, sometimes almost twice as wide as long, rather densely pubescent. Lacinia very small, elongate, completely covered by the glossa, not visible from below and deeply hidden below glossa. Galea narrow and elongate, fusiform. Maxillary palpus small, terminal palpomere narrow and elongate, pubescent. Lateral plate of maxilla very small. Antenna inserted below eye, in deep antennal groove between ventral surface of eye and orbit and maxilla. Lateral border of antennal groove usually angulate. Antenna short to moderately elongate, moderately depressed, widened in middle, with median antennomeres about as long as wide to almost 3 × as wide as long. Lateral margin of antenna sparsely setose, middle glabrous. No fixed setae present on head.

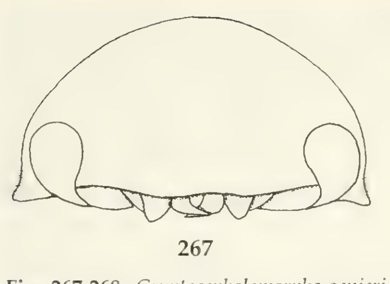
Prothorax (Figs 431-436). Pronotum rather short and wide, very convex to slightly depressed on disk, lateral parts more or less perpendicular or even ventrally incurved, margins not at all explanate. Apical margin in middle gently convex, apical angles gently or barely projecting, rounded. Lateral margins rather evenly, but usually only gently convex. Basal angles very widely rounded off, base fairly convex or almost straight. Apex and base not or very inconspicuously bordered, lateral margins finely bordered, without distinct marginal channel. Surface without median line, regularly convex. Apical and basal angles without setae. Base of pronotum widely covering scutellum and base of elytra. Sternum depressed or even impressed in front of procoxae, very narrow and laminate between and behind coxae, posteriorly far surpassing coxae. Sternum bordered along anterior margin of procoxae.

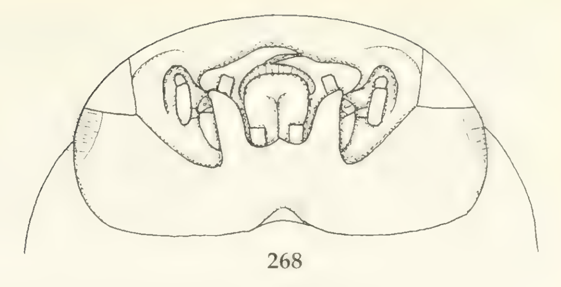
Elytra (Figs 431-436, 596-601). Free. Rather elongate or fairly short, parallel or slightly widened or narrowed towards apex, markedly convex to slightly depressed on disk. Lateral margins rather parallel, base laterally obliquely rounded, shoulders evenly rounded off, apex wide, widely and evenly rounded, sometimes markedly incurved towards suture, sometimes dehiscent, lateral apical angles very widely rounded off. Lateral margin perpendicular or even rather invcurved ventrally, margin not or barely visible from above. Lateral channel very narrow. Epipleurae on ventral surface, not visible from above. Basal border incomplete. Striae absent. Scutellar seta absent. Umbilical pores reduced in number, up to 7, irregularly situated behind shoulder, or even absent. Base in front of shoulders with a row of more or less elongate setae, rarely also anterior half of lateral margin with a fringe of fairly elongate setae.

Wings. Fully developed.

Ventral surface (Fig. 266). Anterior coxae biperforate and closed. Median coxal cavities conjunct.


0,5 mm
261
0,05 mm
262
0,1 mm
263
0,05 mm
264
0,1 mm
265
0,1 mm
266





Figs 267-268. *Cryptocephalomorpha genieri*, spec. nov. **267.** Frontal view of head. **268.** Ventral view of head.

Metepisternum elongate, c. 1.5->2 × as long as wide at anterior border, posteriorly not bent nor hollowed. Abdominal sterna without setae or with 1 fixed seta on either side, but abdomen with more or less dense, rather coarse puncturation and short pilosity. Sternum VII without setae or with 1 tactile seta on either side in both sexes.

Legs (Figs 265, 266). Rather short. Femora large, fairly wide, depressed, with deep furrow on ventral surface to receive most of tibia. Furrows symmetric. Tibiae moderately elongate, only slightly depressed, tarsi rather short and stout, slightly depressed dorsoventrally. First tarsomere of protarsus usually wider than long, first tarsomere of metatarsus slightly or distinctly longer than wide. Ventral surface of tarsi asetose apart from fixed setae and of a single pair of setae on ventral surface of terminal tarsomere. Dorsal surface of tarsi asetose. ♂ protarsus and mesotarsus not widened. In both sexes a variable number of tarsomeres of all tarsi biseriately squamose, in metatarsus, however, the most basal one of the squamose tarsomeres only uniseriately squamose on median side. Tarsal claws smooth.

Male genitalia (Figs 269d-i, 271d-i, 273d-i, 274d-i). Sternum VIII not divided, symmetric, without excision at apex, but base deeply excised. Genital ring rather ovalish with deeply excised basal plate. Aedeagus conchiferous, moderately elongate, not or markedly asymmetric, with obtuse, or acute, or widely rounded, or highly asymmetrically spoon-shaped apex. Internal sac rather simply folded, usually with two rather elongate folds. Orifice moderately to very elongate, situated in middle. Parameres rather dissimilar, triangular, left paramere considerably larger and wider than right, right paramere elongate, both with acute to obtuse apex, with or without apical setae.

Female genitalia (Figs 269k,l-273k,l). Very elongate. Sternum VIII symmetric, with regularly triangular apex and very elongate basal process. Stylomeres 1 and 2 divided, both very elongate. Stylomere 1 medially near apex and laterally near base with narrow clasp. Ventral ensiform setae and dorsal ensiform setae absent, nematiform setae very small. Tergum VIII elongate, delicate, basal plate variably shaped, highly distinctive. Method of reproduction unknown.

7.6.2. Key to the species of the genus *Cryptocephalomorpha* Ritsema

1. Elytra with distinct light spot. Apex of aedeagus wide, rounded and turned up, or asymmetrically spoon-shaped (Figs 269f,g, 271f,g) se. Asia .... 2.

– Elytra without distinct light spot. Apex of aedeagus regularly acute, or unknown (Figs 273f,g, 274f,g). Distribution different .... 4.

2. Elytral spot clearly oblique (Fig. 431). Pronotum not contrastingly light red. Surface without distinct microreticulation. Apex of aedeagus asymmetrically spoon-shaped (Fig. 269f,g). Female genitalia smaller, shorter, and wider (Fig. 269k,l). Malaysia, Thailand, Sumatra, Java, Borneo .... *gaverei* Ritsema

◁ **Figs 261-266.** *Cryptocephalomorpha gaverei* Ritsema. **261.** Ventral view of head and prothorax. **262.** Apex of antenna, medioventral view. **263.** Ventral view of head. **264.** Maxillary and labial palpus. **265.** Right anterior leg, ventral view. **266.** Right posterior leg, ventral view.

– Elytral spot circular or triangular (Figs 433, 434). Pronotum contrastingly light red. Surface with distinct microreticulation. Apex of aedeagus wide, rounded, and turned up (Fig. 271f,g), or unknown. Female genitalia larger, longer, and narrower (Figs 271k,l, 272k,l). Thailand, Vietnam, Philippines .... 3.

3. Smaller species, length <4.2 mm. Elytra longer, ratio l/W >1.28. Elytral spot always well delimited, regularly circular (Fig. 433). s. Thailand, Philippines .... *collaris* (Waterhouse)

– Larger species, length >4.2 mm. Elytra shorter, ratio l/w <1.28. Elytral spot usually less well delimited, somewhat triangular (Fig. 434). n. Thailand, North Vietnam .... *maior*, spec. nov.

4. Larger, wider species, length >4 mm. Lateral margin of elytra near base with elongate setae (Fig. 432). Surface not distinctly punctate. Lateral margin of mandible regularly curved (Figs 267, 268). South Africa .... *genieri*, spec. nov.

– Smaller, narrower species, length <3.5 mm. Lateral margin of elytra asetose (Figs 435, 436). Surface distinctly punctate. Lateral margin of mandible excised and with acute spine (Fig. 273m). Australia, New Guinea, Solomon Islands .... 5.

5. Pronotum slightly wider, more trapeziform. Colouration more contrasting. Puncturation of surface coarser. Aedeagus longer, symmetric, apex obtuse at tip (Figs 274f,g). Australia: n. Qld .... *australica*, spec. nov.

– Pronotum slightly narrower, less trapeziform. Colouration less contrasting. Puncturation of surface finer. Aedeagus shorter, slightly asymmetric, apex acute at tip (Figs 273f,g). PNG, Solomon Islands: Guadalcanal .... *papua* Darlington

7.6.3. The species of the genus *Cryptocephalomorpha* Ritsema

Cryptocephalomorpha gaverei Ritsema, 1875

Figs 1, 261-266, 269, 431, 596, 656

Cryptocephalomorpha gaverei Ritsema, 1875, Versl. p. XCIII, XXII; 1879, Versl. p. LXXXVII; 1909, p. 254; Notman 1925, p. 12, 30; Csiki 1933, p. 1637; Louwerens 1967, p. 213; Darlington 1968, p. 242.

Adelotopus marginatus Waterhouse, 1877, p. 2.

Cryptocephalomorpha marginata, Ritsema 1879, Versl. p. LXXXVII; 1909, p. 254; Andrewes 1919, p. 197; Notman 1925, p. 12, 30; Csiki 1933, p. 1637.

Types. Of *gaverei*. Holotype: Not seen, at present not available.

Of *marginata*. Lectotype (by present designation): ♀, TYPE, Bowring. 63.47*, *Adelotopus marginatus*, (Type) Waterh., *Cryptocephalomorpha gaverei*, Ritsema, Compared with type of *Cryptocephalomorpha gaverei* Ritsema Det. M. SATO 1987 (BMNH).

Type localities. Of *gaverei*: From description: "Batavia, Java". – Of *marginata*: From description: "Java".

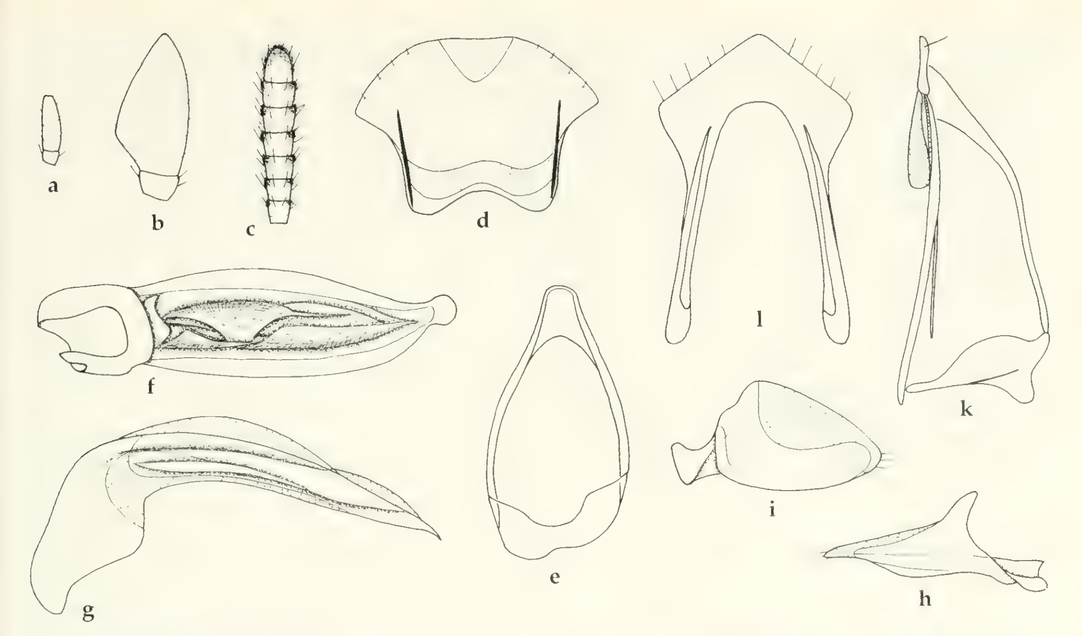
Diagnosis. Rather large, wide, convex species, distinguished by presence of a clearly oblique elytral spot, absence of microreticulation and of distinct puncturation, presence of a large glandular and pilose area at terminal sternum in the male, highly asymmetric aedeagus with spoon-shaped apex, and small and wide ♀ genitalia.

Description

Measurements. Length: 3.7-4.4 mm. Ratios. Width/length of pronotum: 1.40-1.43; width pronotum/head: 1.51-1.58; length/width of elytra: 1.27-1.31; length elytra/pronotum: 1.79-1.88.

Colour (Figs 1, 431). Head dark reddish-piceous, pronotum reddish-piceous, but slightly lighter than head, elytra dark piceous with an oblique, reddish spot behind middle. Basal margin of pronotum, and lateral and apical margins of elytra redish. Lower surface reddish. Mouth parts, antenna and legs more or less light reddish. Whole surface highly glossy.

Head (Figs 261-264, 269a-c). Short and wide, anterior margin of head comparatively convex, border rather angulate, far protruding over mouth parts that are completely concealed from above. Frons rather depressed. Clypeus not recognizable. Labrum very small, invisible from above. Mandibles very small, invisible from above, outer margin regularly curved. Eye rather small, outline feebly



Figs 269a-l. *Cryptocephalomorpha gaverei* Ritsema. Details of head and genitalia. **a.** Lower surface of terminal palpomeres of maxillary palpus. **b.** Lower surface of terminal palpomeres of labial palpus. **c** 5th-11th antennomeres. **d.** ♂ sternum VII. **e.** ♂ genital ring. **f.** Lower surface of aedeagus. **g.** Lateral view of aedeagus. **h.** Right paramere. **i.** Left paramere. **k.** ♀ stylomeres and lateral plate. **l.** ♀ sternum VIII.

convex, in regular line with anterior margin of head, deeply imbedded in prothorax. Orbit obtusely angulate, but not visible from above. Behind eye with a group of c. 5-6 elongate setae. Antennal groove moderately deep, comparatively short, medially and laterally obtusely bordered. Mental tooth narrow, rather elongate, acute, somewhat pointed down. Wings of mentum narrow and elongate, apex rounded. Glossa large, apparently completely fused with paraglossae to a wide plate with gently convex apex that is ventrally fairly strongly keeled. Glossa at apical margin with c. 12 fairly elongate setae, dorsal surface apparently without setae. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus elongate, narrow, parallel, slightly narrowed towards apex. Terminal palpomere of labial palpus very large and extremely wide, markedly securiform, apical margin as long as lateral margin, >2.5 × as long as inner margin, in males apparently even wider than in females. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna comparatively elongate, depressed, 7th-8th antennomeres slightly longer than wide. Microreticulation absent, surface impunctate, impilose, highly glossy. Gula almost impilose.

Pronotum (Fig. 431). Rather wide, dorsal surface very convex, lateral margins evenly convey, not at all explanate. Base clearly wider than apex. Apex gently convex, though apical angles distinctly produced and obtusely angulate. Apex not margined. Sides gently but evenly convex, finely margined, lateral channel absent. Basal angles evenly rounded off, base in middle convex, not margined. Whole surface regularly convex, without median line. Microreticulation absent, surface with scattered, extremely fine puncturation that is almost invisible even under high magnification, impilose, highly glossy.

Elytra (Figs 431, 596). Rather short, wide, parallel, highly convex, though lateral parts not incurved ventro-medially. Apex wide, truncature evenly convex, not incurved, though slightly dehiscent at suture, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles rounded. Basal margin attaining half of distance to suture, whole base including scutellum usually concealed by base of pronotum. Basal border laterally with several delicate setae. Marginal channel very narrow, anteriorly partly concealed. Series of umbilical pores consisting of 3 pores behind shoulder and 3-4 widely spaced pores in apical half. No pores at apex. Pores small, superficial, rather

difficult to see, setae when present fairly elongate. Scutellar pore absent. Striae including sutural stria absent. Microreticulation absent, puncturation sparse and very fine. Surface highly glossy. Wings full.

Lower surface. Anterior border of prosternum in middle with very weak, anteriorly glandular and slightly pilose boss. Prosternal process moderately elongate, surpassing procoxae, rather wide, surface between procoxae depressed, margined inside of coxae, apex straight, depressed, very narrow, somewhat laminate, surface shortly pilose. Metepisternum moderately elongate, c. 1.5 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna with a pair of elongate setae. Terminal sternum in males apparently with 1 short, in females with 2 more elongate setae at some distance from apex. Lower surface glossy, rather densely punctate and pilose. Terminal sternum of male with a large, about circular glandular and densely pilose area near basal margin (Fig. 266).

Legs (Figs 265, 266). Comparatively elongate, 1st tarsomere of protarsus distinctly wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora moderately wide, tibiae moderately elongate, moderately widened. Metatibia comparatively elongate, c. 5 × as long as wide, 1st tarsomere of metatarsus slightly <2 × as long as wide. ♂ protarsus not widened. In both sexes 4th tarsomeres of all tarsi biseriately squamose.

♂ genitalia (Figs 269d-i). Genital ring moderately wide, ovalish, slightly asymmetric, with wide apex, with large, asymmetric, deeply excised base. Sternum VII symmetric, apically membraneous, base deeply concave. Aedeagus rather short, depressed, abrupty narrowed towards apex, highly asymmetric. Basal part long, markedly bent. Lower surface gently convex. Apex fairly wide, strongly asymmetric, spoon-shaped. Orifice very elongate, internal sac rather simply folded. Both parameres large, triangular, left more than right, with membraneous area at upper part. Right paramere elongate, with acute apex, left paramere with obtusely rounded apex, both with c. 3 rather elongate apical setae.

♀ genitalia (Figs 269k,l). Comparatively small, wide. Sternum VIII elongate, apex rather short and wide, markedly triangular, laterally acute, basal process narrow and elongate. Both stylomeres very narrow and elongate, stylomere 1 at apex not widened, stylomere 2 spine-shaped, at apex with 1-2 short seta. Latero-basal angle of basal plate of tergum VIII posteriorly markedly protruding.

Variation. Apart of some variation of size and relative shape of pronotum and elytra, little variation noted, though some sexual variation present in size of labial palpi and presence of a pilose area on ♂ terminal sternum.

Vivipary. Not confirmed in the examined material.

Habits. Little specified. Some specimens captured "sous les écorces" and in "light trap". Dated specimens collected in February, April, May, July, and November, but few specimens dated. Most examined specimens are very old, but some recent captures available from Thailand.

Distribution (Fig. 656). Malaysia, Thailand, Sumatra, Java, Bali, Borneo.

Material examined (57). **Malaysia:** 1♀, Coll. Kraatz, Singapore, *Cryptocephalomorpha gaverei* Rits. (DEIB); 1♂, Singabore (sic!), *Cryptocephalomorpha Gaverei* Rits. = *Adelotopus marginatus* Waterh. Singapore, Coll. L. W. Schaufuss (MNHB); 1♀, Singapore, Sous les écorces, Coll. Castelnau, *Cryptocephalomorpha gaverei* Rits. det. R. Gestro (MCSN); 1♀, Singapore, Es Musaeo H. W. Bates 1892 (MNHN); 1♂, Singapore A. Raffray (MNHN); 1♀, Singapore Biró 1898, ex. collection C. J. Louwerens, *Cryptocephalomorpha gaverei* Rits. det. C. J. Louwerens (NNML); 1♀, MALAYA: Johore kahang, 29.IV.1961, C. H. Fernando (light trap) (BMNH). – **Thailand:** 1♀, Crest of Doi Pui, 1200 m, 17.XI.1978, E. S. Ross Collector (CAS); 1♂, Siam, Collection de Bonvouloir (MNHN). – **Sumatra:** 2♀♀, J. B. Corporaal Sumatra's O. K. Medan 10.IV.0, 20 M, Ex coll. B. H. Klynstra, *Cryptocephalomorpha gaverei* Rits. H. E. Andrewes det. 1930 (MCZ, NNML); 1♀, Corporaal Medan, Z-1920, Ex coll. B. H. Klynstra, *Cryptocephalomorpha gaverei* Rits. H. E. Andrewes det. 1930 (NNML); 1♀, Bindjei-Medan Dr. C. R. Pfister, Ex coll. B. H. Klynstra, *Cryptocephalomorpha gaverei* Rits. H. E. Andrewes det. (NNML); 1♀, Moens Lahat, *Cryptocephalomorpha gaverei* Rits. Det., *Gaverei* Rits. (NNML); 1♀, O. K. Sumatra, Tandjong Poera R. Heinze, 2 1907, *Cryptocephalomorpha gaverei* Rits. H. E. Andrewes det. (SMTD); 1♀, Palembang J. Bouchard, Renè Oberthur, Correctly named H. E. A., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, Padang Sidembuam, Pasteur Sumatra occid., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, Pad. Sid., A. L. v. Hasselt Padang Sidemb., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, Edw. Jacobson Binabang Simalur. 9.1913, *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 5♂♂, 3♀♀, Sumatra Palembang J. Bouchard (CBM, MNHN); 1♂, 1♀, VII.1921, Sibolangit, det. Andrewes, det. *gaverei* (DEIB). – **Java:** 1♀, TYPE, Bowring. 63.47*, lectotype! *Adelotopus marginatus*, (Type) Waterh., Compared with type of *Cryptocephalomorpha gaverei* Ritsema Det. M. SATO 1987 (BMNH); 1♀, E. Jacobson Batavia April 1908, E. Jacobson Collect., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, E. Jacobson Batavia Nov. 07/29.08, *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, E. Jacobson Batavia Nov. 1908, *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♂, W. Java Bogor 250 m. 2.V.1944 leg. R. v. d. Keip,

fr/1959 Louwerens, *Cryptocephalomorpha gaverei* Rits. det. C. J. Louwerens (MCZ); 1♀, West Java, 250 m, Buitenzorg, 22.VI.1950, A. M. R. Wegner, ex collection C. J. Louwerens, *Cryptocephalomorpha gaverei* Ritsema det. C. J. Louwerens (NNML); 1♀, Buitenzorg 7.1919, *Cryptocephalomorpha gaverei* Rits. H. E. Andrewes det. (DEIB); 1♀, J. B. CORPORAAL, Preanger S Tjigembong '15, Ex. coll. B. H. Klynstra, *Cryptoc. gaverei* Rits. (NNML); 1♀, Landjong Priok Nov. 1908, *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♂, Mr. Th. F. Lucassen, Simpo (?) on 3000 v. Tagal. XI.1890, *Cryptocephalomorpha Gaverei* Rits. (MNHN); 1♀, Mr. Th. F. Lucassen, Simpon (?) on 3000 m, Tagal, XI.1890, *Cryptocephalomorpha Gaverei* Rits., D. Ritsema (MCSN); 2♀♀, Mr. Th. F. Lucassen Simpon (?) 3000 m Tagal 11.1889, 11.1890, *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, Dr. E. Dubois Java centr., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, acht poot, Macklot, *Cryptocephalomorpha* (Rits.) *gaverei*, Rits., *Cryptocephalomorpha gaverei* Rits. Det. (NNML). – **Bali:** 1♀, de Vos., ex collection J. J. de Vos tot Nederveen Cappel, *Gaverei* Rits.(NNML). – **Borneo:** 1♀, Kuching, Mjoberg Collection, *Cryptocephalomorpha gaverei* Ritsema ? (CAS); 1♂, 1♀, Borneo Sarawak 1865.66 Coll. P. Doria, *Cryptocephalomorpha Gaverei* Rits., *Cryptocephalomorpha gaverei* Rits. Det. R. Gestro (MCSN); 1♂, Borneo Sarawak 1865.66 Coll. P. Doria, *Cryptocephalomorpha gaverei* Rits. Det. R. Gestro (MCSN); 1♀, Borneo Wahner (?), Coll. v. Schönfeldt (SMF); 1♀, N. O. Borneo Grabowsky, det. *gaverei* (MNHB); 1♂, S. O. Borneo Grabowsky, det. *gaverei* (MNHB); 1♀, Borneo, Gebr. W. Müller Vermächt. 1909 (SMTD). – **?:** 1♀, Seipg (?) Deli, Coll. Dr. H. J. Veth, *Cryptocephalomorpha gaverei* Rits., *Cryptocephalomorpha gaverei* Rits. Det. (NNML); 1♀, Coll. L. W. Schaufuss, det. *gaverei* (MNHB); 1♂, *Cryptocephalomorpha gaverei* Ritsema (MNHB); 1♂, A. L. v. H. Tapanoeli, Coll. Dr. W. J. Veth, *Cryptocephalomorpha gaverei* Rits. Det. (NNML).

Cryptocephalomorpha genieri, spec. nov.

Figs 267, 268, 270, 432, 597, 654

Types. Holotype: ♀, SOUTH AFRICA: N. TVL Mmabolela Estate 22°40'S 28°15'E, 20-24.XI.1991, F. Génier, savanna, light trap (NMO).

Diagnosis. Medium-sized, short and wide, rather convex species, distinguished by absence of elytral spot, absence of microreticulation, absense of distinct puncturation, absence of an acute tooth at the outer margin of mandible, and rather wide ♀ genitalia.

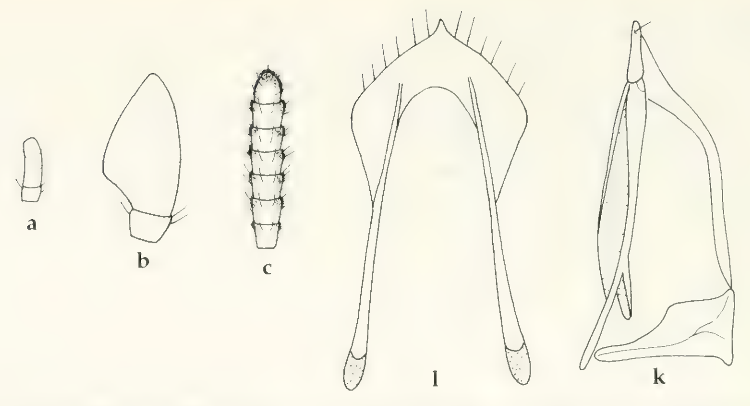
Description

Measurements. Length: 4.1 mm. Ratios. Width/length of pronotum: 1.38; width pronotum/head: 1.57; length/width of elytra: 1.20; length elytra/pronotum: 1.72.

Colour. Head and pronotum dark reddish, elytra light reddish-piceous with lateral margins and large apical margin yellow, without light spot. Lower surface yellowish. Mouth parts, antenna and legs yellowish, tibiae and tarsi slightly darker than femora. Whole surface glossy.

Head (Figs 267, 268, 270a-c). Comparatively short, moderately wide, anterior margin of head fairly convex, border rather convex, far protruding over mouth parts that are completely concealed from above. Frons fairly convex. Clypeus not separated from frons. Labrum small, invisible from above. Mandibles very small, invisible from above, outer margin regularly evenly curved. Eye rather small, outline strongly convex, much more convex than anterior margin of head, rather deeply imbedded in prothorax. Orbit obtusely angulate, barely visible from above. Behind eye with a group of c. 7-8 moderately elongate setae. Antennal groove moderately deep, comparatively short, medially and laterally bordered. Mental tooth rather narrow and short, triangular, acute. Wings of mentum short, rather moderately wide, laminate, apex evenly rounded. Glossa large, completely fused with paraglossae to a very wide, tongue-like, slightly protruding plate with convex apex that is ventrally very strongly keeled and is rather pointed down. Glossa at apical margin with c. 16 elongate setae, dorsal surface apparently without setae. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus narrow, and elongate, slightly curved, slightly narrowed towards apex. Terminal palpomere of labial palpus large and fairly wide, securiform, though apical margin much shorter than lateral margin, slightly longer than inner margin. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna rather elongate, slightly depressed, 7th-8th antennomeres c. 1.2 × as wide as long. Microreticulation absent, puncturation almost invisible, surface impilose, glossy. Gula almost impilose.

Pronotum (Fig. 432). Rather wide, dorsal surface convex, lateral margin barely visible from above. Base slightly wider than apex. Apex slightly convex, not margined, apical angles barely produced, shortly rounded. Lateral margins very gently convex, finely margined, lateral channel absent, margins not at all explanate. Basal angles evenly rounded off, base markedly convex, unmargined. Surface



Figs 270a-c, k,l. *Cryptocephalomorpha genieri*, spec. nov. Details of head and ♀ genitalia. For legends see fig. 269.

without median line. Microreticulation absent, puncturation extremely fine and sparse, almost invisible, surface impilose, glossy.

Elytra (Figs 432, 597). Short, convex, anteriorly rather parallel, slightly depressed on disk. Lateral parts not incurved ventro-medially. Apex wide, truncature evenly convex, not incurved towards suture, not dehiscent, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles completely rounded. Basal margin extremely fine, attaining half of distance to suture, whole base including scutellum concealed by base of pronotum. Basal border laterally with several setae, also anterior half of lateral margin at and below border with a fringe of setae. Marginal channel very narrow, visible from above. Series of umbilical pores consisting of 3 close pores far behind shoulder and 2 spaced pores at or behind middle, apex without pores. Umbilical setae elongate. Scutellar pore absent. Striae including sutural stria absent. Microreticulation absent, puncturation sparse and extremely fine, barely recognizable, surface glossy. Wings fully developed.

Lower surface. Anterior border of prosternum in middle with fairly well developed, slightly convex, anteriorly glandular and pilose boss. Prosternal process rather elongate, far surpassing procoxae, moderately narrow, surface in front of coxae somewhat depressed, margined inside of procoxae, between coxae very narrow, high, laminate, apex obliquely convex, extremely narrow, markedly laminate, surface shortly pilose. Metepisternum rather elongate, slightly <2 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna with 1 elongate seta, with moderately coarse, sparse puncturation and short pilosity. Terminal sternum in ♀ with 1 elongate seta, rather sparsely punctate and pilose. ♂ terminal sternum unknown.

Legs. Moderately elongate, 1st tarsomere of protarsus wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora rather wide, tibiae rather elongate, slightly widened. Metatibia moderately elongate, c. 4.5 × as long as wide, 1st tarsomere of metatarsus >1.3 × as long as wide. ♂ protarsus unknown. In the female 3rd-4th tarsomeres of all tarsi biseriately squamose, but 3rd tarsomere of metatarsus only medially squamose.

♂ genitalia. Unknown.

♀ genitalia (Figs 270k,l). Comparatively large, fairly wide. Sternum VIII elongate, apex rather wide, triangular, laterally angulate, basal process moderately elongate, apically slightly widened. Both stylomeres very narrow and elongate, stylomere 1 at apex widened, stylomere 2 spine-shaped, comparatively large, at apex with 1 short seta. Latero-basal angle of basal plate of tergum VIII posteriorly not much protruding.

Variation. Unknown.

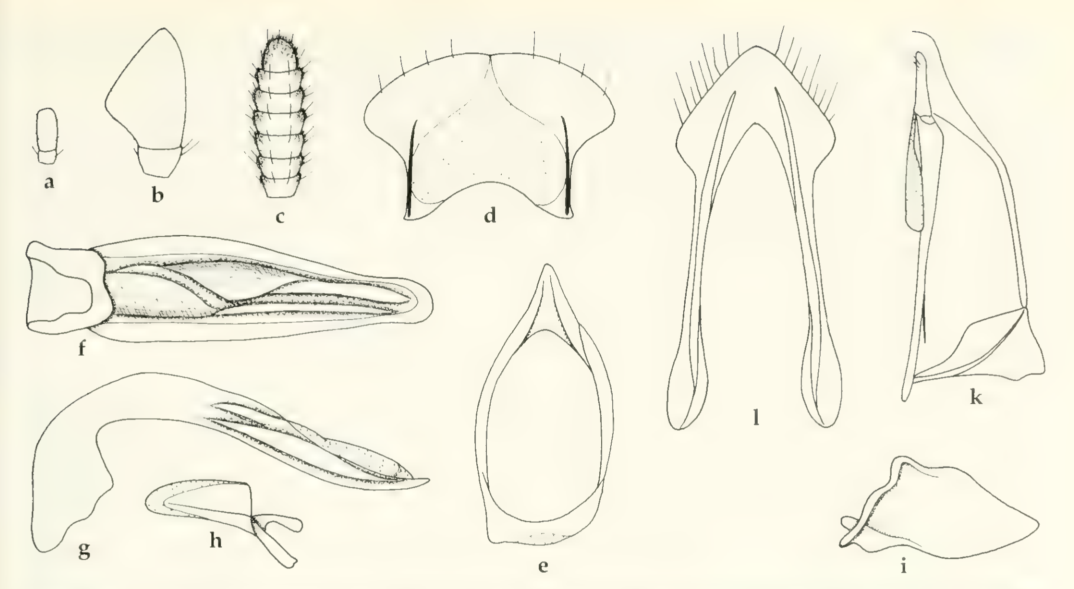
Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. Holotype collected in savanna at light trap. So far captured in November.

Distribution (Fig. 654). South Africa. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name is an acronym in honour of the collector.



Figs 271a-l. *Cryptocephalomorpha collaris* (Waterhouse). Details of head and genitalia. For legends see fig. 269.

Cryptocephalomorpha collaris (Waterhouse, 1877)
Figs 271, 433, 598, 656

Adelotopus collaris Waterhouse, 1877, p. 2.
Cryptocephalomorpha collaris, Ritsema 1909, p. 254; Andrewes 1919, p. 197; Notman 1925, p. 12, 30; Csiki 1933, p. 1637; Darlington 1968, p. 242.

Types. Lectotype (by present designation): ♀, TYPE, Siam, Bowring 63.47*, *Adelotopus collaris* (Type) C. Waterh. (BMNH).

Type locality. "Siam" (Thailand).

Diagnosis. Rather small, fairly wide, moderately convex species, distinguished by presence of an almost regularly circular elytral spot, contrastingly light reddish pronotum, presence of microreticulation, absence of distinct puncturation, absence of a glandular, pilose area at terminal sternum in the male, barely asymmetric aedeagus with widely rounded apex, and large and elongate ♀ genitalia; further distinguished from closely related *C. maior*, spec. nov. by smaller size, longer elytra, and well delimited, circular elytral spot.

Description

Measurements. Length: 3.6-4.2 mm. Ratios. Width/length of pronotum: 1.45-1.51; width pronotum/head: 1.32-1.39; length/width of elytra: 1.28-1.32; length elytra/pronotum: 1.94-2.05.

Colour (Fig. 433). Head dark reddish-piceous to dark piceous, pronotum contrastingly reddish, elytra more or less dark piceous with a well delimited, regularly circular, light reddish spot behind middle. Lateral and apical margins of elytra widely reddish, suture narrowly reddish translucent. Lower surface reddish. Mouth parts, antenna and legs more or less light reddish, tibiae and tarsi slightly darker than femora. Whole surface moderately glossy.

Head (Figs 271a-c). Short and wide, anterior margin of head little convex, border rather convex, far protruding over mouth parts that are completely concealed from above. Frons convex. Clypeus faintly marked by the very superfical clypeal suture. Labrum very small, invisible from above. Mandibles very small, invisible from above, outer margin regularly curved. Eye rather small, outline strongly convex, much more convex than anterior margin of head, deeply imbedded in prothorax. Orbit obtusely angulate, partly visible from above. Behind eye with a group of c. 5-6 short setae. Antennal groove moderately deep, comparatively short, medially and laterally bordered. Mental tooth

moderately wide, rather elongate, obtusely acute, not pointed down. Wings of mentum wide, laminate, apex obtusely angulate. Glossa large, apparently completely fused with paraglossae to a moderately wide, tongue-like, far protruding plate with convex apex that is ventrally strongly keeled and is rather pointed down. Glossa at apical margin with c. 12 fairly elongate setae, dorsal surface apparently without hairs. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus moderately elongate, rather curved, slightly narrowed towards apex. Terminal palpomere of labial palpus very large and wide, markedly securiform, apical margin shorter than lateral margin, >2 × as long as inner margin. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna short and wide, depressed, 7th-8th antennomeres >2.5 × as wide as long. Microreticulation present, though rather superficial, very fine, isodiametric, puncturation sparse and extremely fine, surface impilose, moderately glossy. Gula almost impilose.

Pronotum (Fig. 433). Rather wide, dorsal surface on disk somewhat depressed, lateral parts almost perpendicular, therefore lateral margin barely visible from above. Base clearly wider than apex. Apex barely convex, apical angles barely produced, widely rounded. Apex very finely and superficially margined. Lateral margins gently but evenly convex, finely margined, lateral channel absent, margins not at all explanate. Basal angles evenly rounded off, base almost straight or gently convex, very finely and superficially margined. Surface without median line. Microreticulation present, distinct, moderately fine, isodiametric, surface without puncturation, impilose, moderately glossy.

Elytra (Figs 433, 598). Moderately elongate, wide, parallel, highly convex, though slightly depressed on disk. Lateral parts distinctly incurved ventro-medially. Apex wide, truncature evenly convex, markedly incurved towards suture, not dehiscent, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles rounded. Basal margin attaining half of distance to suture, whole base including scutellum usually concealed by base of pronotum. Basal border laterally with several delicate setae. Marginal channel very narrow, completely concealed. Umbilical pores absent. Scutellar pore absent. Striae including sutural stria absent. Microreticulation present, distinct, coarser than on pronotum, isodiametric. Puncturation absent. Surface moderately glossy. Wings full.

Lower surface. Anterior border of prosternum in middle with rather convex, anteriorly glandular and pilose boss. Prosternal process rather elongate, far surpassing procoxae, very narrow, surface in front of coxae impressed, margined inside of procoxae, between coxae very narrow, high, laminate, apex straight, extremely narrow, markedly laminate, surface shortly pilose. Metepisternum elongate, almost 2 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna without elongate setae, but with coarse, fairly dense puncturation and pilosity. Terminal sternum in both sexes without elongate setae, impunctate and impilose. ♂ terminal sternum without glandular, densely pilose area.

Legs. Short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora rather wide, tibiae rather short, widened. Metatibia comparatively short, c. 4 × as long as wide, 1st tarsomere of metatarsus distinctly wider than long. ♂ protarsus not widened. In both sexes 2nd-4th tarsomeres of all tarsi biseriately squamose, but 2nd tarsomere of metatarsus only medially squamose.

♂ genitalia (Figs 271d-i). Genital ring moderately wide, ovalish, slightly asymmetric, with rather narrow apex, with large, asymmetric, barely excised base. Sternum VII symmetric, apically not membraneous, base very deeply concave. Aedeagus rather short, depressed, gently narrowed towards apex, feebly asymmetric. Basal part long, markedly bent. Lower surface basally gently concave, apically strongly convex. Apex wide, symmetric, widely rounded. Orifice very elongate, internal sac rather simply folded. Both parameres large, triangular, left more than right, right with membraneous area at upper part. Right paramere elongate, with obtuse apex, left paramere with acute apex, both apparently without apical setae.

♀ genitalia (Figs 271k,l). Comparatively large, narrow. Sternum VIII very elongate, apex rather elongate, markedly triangular, laterally rounded, basal process elongate, apically distinctly widened. Both stylomeres very narrow and elongate, stylomere 1 at apex widened, stylomere 2 spine-shaped, at apex with 1-2 short seta. Basal plate of tergum VIII without posteriorly protruding latero-basal angle.

Variation. Apart from some variation of size and relative shape of pronotum and elytra, little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. One specimen captured at light. Collected in December and during the period from February to September.

Distribution (Fig. 656). Southern Thailand, Philippines: Luzon.

Material examined (5). **Thailand:** 1♀, TYPE, Siam, Bowring 63.47*, lectotype! *Adelotopus collaris* (Type) C. Waterh. (BMNH); 1♀, (15) Prov. Rayong, Khao Chamao NP, leg. Jäch, 12.XII.1990 (NHMW). – **Philippines:** 1♂, Central Plains of Luzon Is. P.I., II.-IX.1945 Darlington, *Collaris* Wat. det. Darlington at B.M. 47-48 notes p. 67, *Cryptocephalomorpha collaris* Waterh. (MCZ); 2♀♀, Central Plains of Luzon Is. P.I., II.-IX.1945 Darlington, det. *collaris* (CBM, MCZ).

Cryptocephalomorpha maior, spec. nov.

Figs 74, 272, 434, 599, 656

Types. Holotype: ♀, Vietnam N. Tonkin Cuc-Phuong Nat. Park 2.-12.V.1991, E. Jendek leg (NHMW). – Paratypes: 1♀, NW THAILAND, MAE HONG SON, 28.4.-3.5.1992, leg. P. Pachlatko (CBM); 1♀, NW THAILAND 9.-16.5.1991 MAE HONG SON, BAN HUAI PO 1600 m Leg. PACHLATKO (NHMB); 1♀, NW THAILAND, 1991, 19.19N, 97.59 E, Mae Hong Son, 7.5. L. Dembicky leg. (NHMW); 1♀, THAI, 13.5.1993, 19.29N 98.18E SOPPONG 750 m, L. Bocàk lgt. (SMNS)

Diagnosis. Rather large, fairly wide, moderately convex species, distinguished by presence of a slightly triangular elytral spot, contrastingly light reddish pronotum, presence of microreticulation, absence of distinct puncturation, absence of a glandular, pilose area at terminal sternum in the male, and large and elongate ♀ genitalia; further distinguished from closely related *C. collaris* (Waterhouse) by larger size, shorter elytra, and less well delimited, not circular elytral spot.

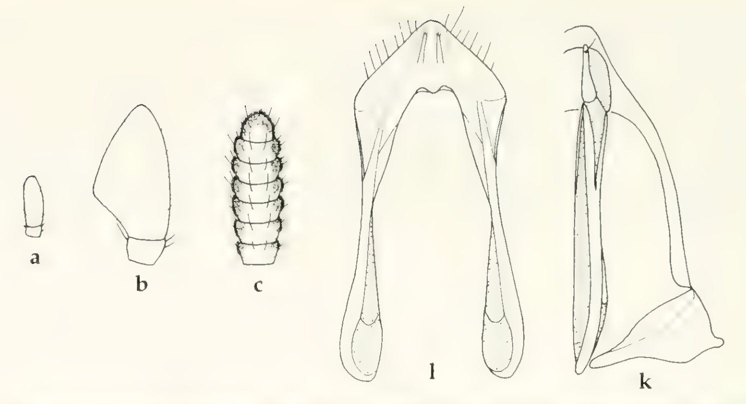
Description

Measurements. Length: 4.2-4.7 mm. Ratios. Width/length of pronotum: 1.44-1.52; width pronotum/head: 1.37-1.42; length/width of elytra: 1.23-1.28; length elytra/pronotum: 1.80-1.97.

Colour (Figs 74, 434). Head reddish-piceous to piceous, pronotum rather contrastingly reddish, elytra piceous with a moderately well delimited, about triangular, reddish spot behind middle that may occupy almost the whole disk leaving only base and apex and a narrow sublateral stripe dark. Lateral and apical margins of elytra widely reddish, suture narrowly reddish translucent. Lower surface reddish. Mouth parts, antenna and legs more or less light reddish, tibiae and tarsi darker than femora. Whole surface moderately glossy.

Head (Figs 272a-c). Short and wide, anterior margin of head moderately convex, border rather convex, far protruding over mouth parts that are completely concealed from above. Frons convex. Clypeus faintly marked by the very superfical clypeal suture. Labrum very small, invisible from above. Mandibles very small, invisible from above, outer margin regularly curved. Eye rather small, outline strongly convex, much more convex than anterior margin of head, deeply imbedded in prothorax. Orbit obtusely angulate, partly visible from above. Behind eye with a group of c. 5-6 short setae. Antennal groove moderately deep, comparatively short, medially and laterally bordered. Mental tooth moderately wide, rather elongate, obtusely acute, not pointed down. Wings of mentum wide, laminate, apex obtusely angulate. Glossa large, apparently completely fused with paraglossae to a moderately wide, tongue-like, far protruding plate with convex apex that is ventrally keeled and is rather pointed down. Glossa at apical margin with c. 12 fairly elongate setae, dorsal surface apparently without hairs. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus rather elongate, slightly curved, slightly narrowed towards apex. Terminal palpomere of labial palpus very large and wide, markedly securiform, apical margin shorter than lateral margin, >2 × as long as inner margin. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna short and wide, depressed, 7th-8th antennomeres >2.5 × as wide as long. Microreticulation present, though rather superficial, very fine, isodiametric, puncturation virtually invisible, surface impilose, moderately glossy. Gula almost impilose.

Pronotum (Fig. 434). Rather wide, dorsal surface on disk somewhat depressed, lateral parts almost perpendicular, therefore lateral margin barely visible from above. Base clearly wider than apex. Apex barely convex, apical angles barely produced, widely rounded. Apex extremely finely and superficial-



Figs 272a-c, k, l. *Cryptocephalomorpha maior*, spec. nov. Details of head and genitalia. For legends see fig. 269.

ly margined. Lateral margins gently but evenly convex, finely margined, lateral channel absent, margins not at all explanate. Basal angles evenly rounded off, base very gently convex, almost unmargined. Surface without median line. Microreticulation present, distinct, moderately fine, isodiametric, surface without puncturation, impilose, moderately glossy.

Elytra (Figs 74, 434, 599). Moderately short, wide, parallel, highly convex, though slightly depressed on disk. Lateral parts distinctly incurved ventro-medially. Apex wide, truncature evenly convex, markedly incurved towards suture, not dehiscent, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles rounded. Basal margin attaining half of distance to suture, whole base including scutellum usually concealed by base of pronotum. Basal border laterally with several delicate setae. Marginal channel very narrow, completely concealed. Umbilical pores absent. Scutellar pore absent. Striae including sutural stria absent. Microreticulation present, distinct, slightly coarser than on pronotum, isodiametric. Puncturation absent. Surface moderately glossy. Wings full.

Lower surface. Anterior border of prosternum in middle with rather convex, anteriorly glandular and pilose boss. Prosternal process rather elongate, far surpassing procoxae, very narrow, surface in front of coxae impressed, margined inside of procoxae, between coxae very narrow, high, laminate, apex straight, extremely narrow, markedly laminate, surface shortly pilose. Metepisternum elongate, slightly <2 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna without elongate setae, but with coarse, fairly dense puncturation and pilosity. Terminal sternum in ♀ without elongate setae, impunctate and impilose. ♂ terminal sternum unknown.

Legs. Short, 1st tarsomere of protarsus much wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora rather wide, tibiae rather short, widened. Metatibia comparatively short, c. 3.5 × as long as wide, 1st tarsomere of metatarsus distinctly wider than long. ♂ protarsus unknown. In ♀ 2nd-4th tarsomeres of all tarsi biseriately squamose, but 2nd tarsomere of metatarsus only medially squamose.

♂ genitalia. Unknown.

♀ genitalia (Figs 272k,l). Comparatively large, narrow. Sternum VIII very elongate, apex rather elongate, markedly triangular, laterally rounded, basal process elongate, apically distinctly widened. Both stylomeres very narrow and elongate, stylomere 1 at apex widened, stylomere 2 spine-shaped, at apex with 1-2 short seta. Basal plate of tergum VIII without posteriorly protruding latero-basal angle.

Variation. Apart from some variation of size and relative shape of pronotum and elytra, little variation noted.

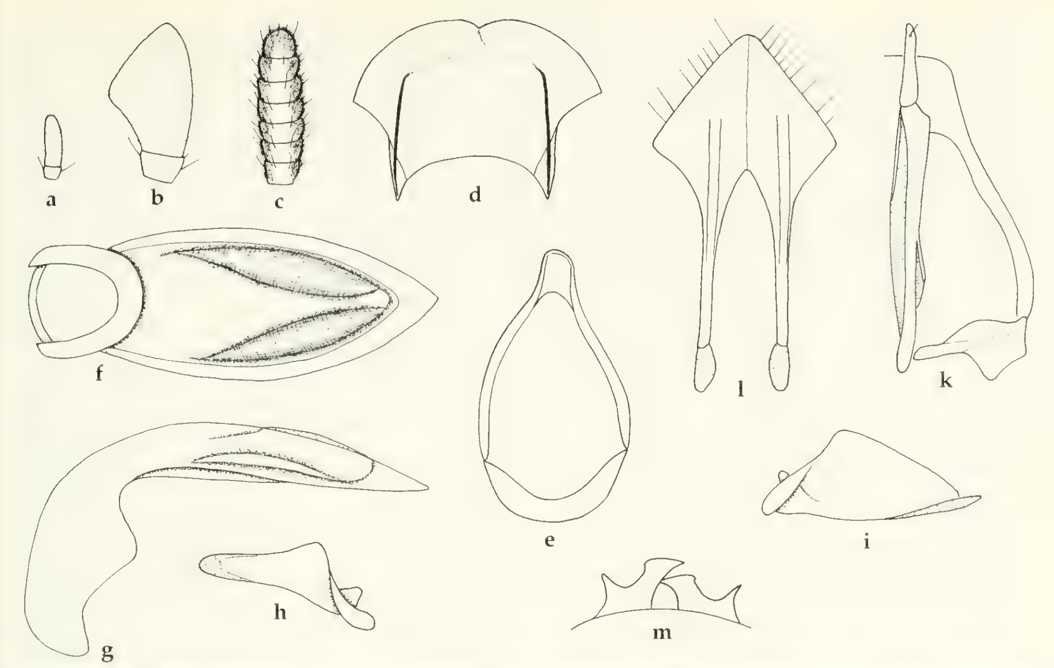
Vivipary. Not confirmed in the examined material.

Habits. Unknown. So far captured in April and May.

Distribution (Fig. 656). North Vietnam, northern Thailand.

Material examined (5). Only the type series.

Etymology. The name refers to the large size of this species.



Figs 273a-m. *Cryptocephalomorpha papua* Darlington. Details of head and genitalia. m. Mandibles. For legends see fig. 269.

Cryptocephalomorpha papua Darlington, 1968
Figs 75, 97, 273, 435, 600, 655, 656

Cryptocephalomorpha papua Darlington, 1968, p. 242, fig. 156.

Types. Holotype: ♂, Papua: Kokoda 1.200 ft. IX.1933, L. E. Cheesman, B. M. 1933-456. Holotype *Cryptocephalomorpha papua* Darl. (BMNH). – Paratype: 1♂, Papua: Kokoda 1.200 ft. VI.1933, L. E. Cheesman, B. M. 1933-456., At light, A 50, Paratype *Cryptoceph. papua* D. (MCZ).

Type locality. "Kokoda", Papua New Guinea.

Diagnosis. Small, elongate, rather depressed species, distinguished by absence of an elytral spot, absence of microreticulation, presense of distinct puncturation, presence of an acute tooth at the outer margin of mandible, absence of a glandular, pilose area at terminal sternum in the male, almost symmetric aedeagus with acute apex, and rather small ♀ genitalia; further distinguished from closely related *C. australica*, spec. nov. by smaller size, not clearly bicoloured colour, narrower, less trapezoidal pronotum, pronotum, less coarse puncturation, and shorter aedeagus with acute rather than obtuse apex.

Description

Measurements. Length: 3.0-3.3 mm. Ratios. Width/length of pronotum: 1.32-1.46; width pronotum/head: 1.30-1.40; length/width of elytra: 1.29-2.34; length elytra/pronotum: 1.93-2.0.

Colour. Whole surface dark yellow to light reddish, elytra usually faintly darker though with reddish suture, without light spot. Lower surface yellowish. Mouth parts, antenna and legs yellowish to light reddish, tibiae and tarsi slightly darker than femora. Whole surface glossy.

Head (Fig 273a-c, m). Comparatively elongate, moderately wide, anterior margin of head fairly convex, border rather convex, far protruding over mouth parts that are completely concealed from above. Frons fairly convex. Clypeus not separated from frons. Labrum very small, invisible from above. Mandibles very small, invisible from above, outer margin deeply excised and with an acute tooth. Eye large, outline strongly convex, much more convex than anterior margin of head, deeply

imbedded in prothorax. Orbit obtusely angulate, barely visible from above. Behind eye with a group of c. 5-6 short setae. Antennal groove moderately deep, comparatively short, medially and laterally bordered. Mental tooth rather narrow and short, triangular, acute. Wings of mentum short, rather narrow, laminate, apex evenly rounded. Glossa tiny, completely fused with paraglossae to a moderately wide, tongue-like, slightly protruding plate with convex apex that is ventrally strongly keeled and is rather pointed down. Glossa at apical margin with c. 10 elongate setae, dorsal surface apparently without hairs. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus narrow, and elongate, slightly curved, slightly narrowed towards apex. Terminal palpomere of labial palpus large and fairly wide, securiform, though apical margin much shorter than lateral margin, barely longer than inner margin. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna short and wide, depressed, 7th-8th antennomeres slightly <2.5 × as wide as long. Microreticulation absent, puncturation sparse and extremely fine, surface impilose, glossy. Gula almost impilose.

Pronotum (Fig. 435). Rather wide, dorsal surface on disk rather depressed, lateral parts almost perpendicular, therefore lateral margin barely visible from above. Base clearly wider than apex, lateral margins as seen from above obliquely narrowed towards apex. Apex barely convex, apical angles barely produced, widely rounded. Apex barely margined. Lateral margins gently but evenly convex, finely margined, lateral channel absent, margins not at all explanate. Basal angles evenly rounded off, base almost straight or even faintly concave, almost unmargined. Surface without median line. Microreticulation absent, puncturation moderately dense, rather fine, surface impilose, glossy.

Elytra (Fig. 75, 435, 600). Rather elongate, evenly widened towards apex, rather depressed on disk. Lateral parts distinctly incurved ventro-medially. Apex wide, truncature evenly convex, markedly incurved towards suture, somewhat dehiscent, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles rounded. Basal margin attaining half of distance to suture, whole base including scutellum concealed by base of pronotum. Basal border laterally with several delicate setae. Marginal channel very narrow, completely concealed. Umbilical pores absent. Scutellar pore absent. Striae including sutural stria absent, though in holotype inner striae vaguely indicated as faint impressions. Microreticulation absent, puncturation moderately coarse, rather dense, surface glossy. Wings full.

Lower surface. Anterior border of prosternum in middle with extremely well developed, protruding, anteriorly glandular and pilose boss. Prosternal process rather elongate, far surpassing procoxae, very narrow, surface in front of coxae depressed, margined inside of procoxae, between coxae very narrow, high, laminate, apex gfently convex, extremely narrow, markedly laminate, surface shortly pilose. Metepisternum elongate, >2 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna without elongate setae, with moderately coarse, fairly sparse puncturation, but apparently without pilosity. Terminal sternum in both sexes apparently with 1 moderately elongate seta, sparsely punctate, impilose. ♂ terminal sternum without glandular, densely pilose area.

Legs. Moderately elongate, 1st tarsomere of protarsus wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora moderately wide, tibiae rather elongate, but feebly widened. Metatibia comparatively elongate, c. 5-6 × as long as wide, 1st tarsomere of metatarsus slightly >1.3 × as long as wide. ♂ protarsus not widened. In both sexes 2nd-4th tarsomeres of all tarsi biseriately squamose, but 2nd tarsomere of metatarsus only medially squamose.

♂ genitalia (Figs 273d-i). Genital ring rather wide, ovalish, almost symmetric, with rather wide apex, with large, symmetric, rather deeply excised base. Sternum VII symmetric, apically not membraneous, base very deeply concave, basal angles acute. Aedeagus short and wide, depressed, evenly narrowed towards apex, feebly asymmetric. Basal part very long, markedly bent. Lower surface almost straight. Apex acute. Orifice elongate, internal sac rather simply folded. Both parameres rather large, triangular, left more than right, both with membraneous area at upper part. Right paramere elongate, with obtuse apex, left paramere with acute apex, both apparently without apical setae.

♀ genitalia (Figs 97, 273k,l). Comparatively large, fairly narrow. Sternum VIII elongate, apex narrow and elongate, markedly triangular, laterally angulate, basal process moderately elongate, apically slightly widened. Both stylomeres very narrow and elongate, stylomere 1 at apex widened, stylomere 2 spine-shaped, comparatively large, at apex with 1 short seta. Basal plate of tergum VIII with posteriorly markedly protruding latero-basal angle.

Variation. Apart from some variation relative shape of pronotum, little variation noted.

Vivipary. Not confirmed in the examined material.

Habits. Largely unknown. The paratype captured at light, two further specimens have been collected by ants in a Nypa palm swamp. Dated specimens collected in March and November.

Distribution (Figs 655, 656). Eastern part of New Guinea (Papua New Guinea) and Guadalcanal, Solomon Islands.

Material examined (5). **NG:** 2♂♂, Papua: Kokoda 1.200 ft. VI., XI.1933, L. E. Cheesman, B. M. 1933-456., holotype!, paratype! *Cryptocephalomorpha papua* Darl. (BMNH, MCZ); 2♀♀, PAPUA NEW GUINEA, Madang Province, Nagada Harbour, Riwo Village, 1 km NW of Jais Aben Resort, 2 m, 7.III. 1989, Stop '89-17, D. H. Kavanaugh & G. E. Ball Collectors, PAPUA NEW GUINEA EXPEDITION 1989 (CAS). – **Solomon Isl.:** 1♀, 4021, Guadalcanal Kukum 1811. 1963, P. Greenslade, 15 (BMNH).

Cryptocephalomorpha australica, spec. nov.

Figs 274, 436, 601, 656

Types. Holotype: ♂, Miller's Crossing, 30 ml. N. of Cooktown, N. Qld. 24.-25.XI.1965, G. Monteith (QMB T26069).

Diagnosis. Small, elongate, rather depressed species, distinguished by absence of an elytral spot, absence of microreticulation, presense of distinct puncturation, presence of an acute tooth at the outer margin of mandible, absence of a glandular, pilose area at terminal sternum in the male, and symmetric aedeagus with rather acute apex; further distinguished from closely related *C. papua* Darlington by larger size, bicoloured colour, wider, more trapezoidal pronotum, narrowed towards apex instead of widened elytra, coarser puncturation, and longer aedeagus with obtuse rather than acute apex.

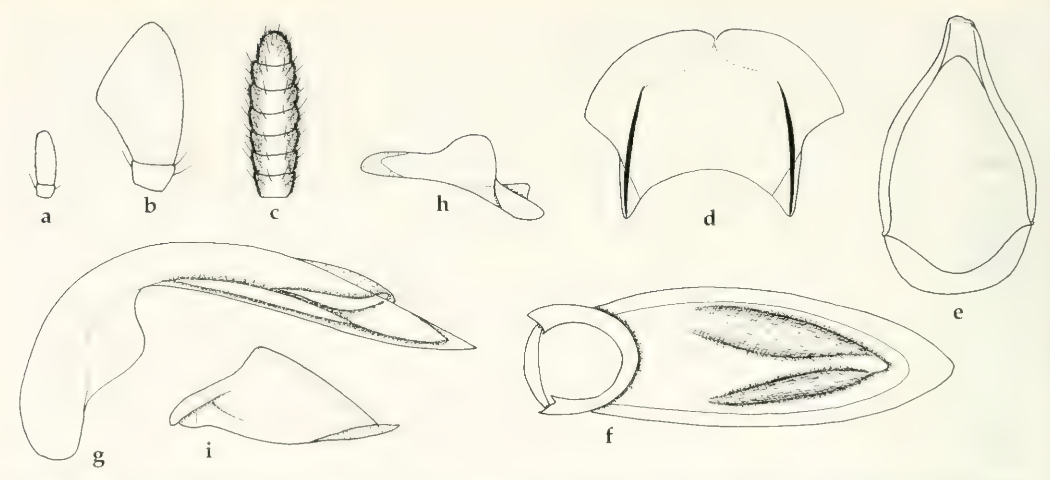
Description

Measurements. Length: 3.5 mm. Ratios. Width/length of pronotum: 1.55; width pronotum/head: 1.44; length/width of elytra: 1.31; length elytra/pronotum: 2.04.

Colour. Slightly bicoloured, head and pronotum light reddish, elytra light piceous with light reddish lateral margin and suture, without light spot. Lower surface yellowish. Mouth parts, antenna and legs yellowish to light reddish, tibiae and tarsi barely darker than femora. Whole surface glossy.

Head (Figs 274a-c). Comparatively elongate, moderately wide, anterior margin of head fairly convex, border rather convex, far protruding over mouth parts that are completely concealed from above. Frons fairly convex. Clypeus not separated from frons. Labrum very small, invisible from above. Mandibles very small, invisible from above, outer margin deeply excised and with an acute tooth. Eye large, outline strongly convex, much more convex than anterior margin of head, deeply imbedded in prothorax. Orbit obtusely angulate, barely visible from above. Behind eye with a group of c. 5-6 short setae. Antennal groove moderately deep, comparatively short, medially and laterally bordered. Mental tooth rather narrow and short, triangular, acute. Wings of mentum short, rather narrow, laminate, apex obliquely rounded. Glossa tiny, and completely fused with paraglossae to a moderately wide, tongue-like, slightly protruding plate with convex apex that is ventrally strongly keeled and is rather pointed down. Glossa at apical margin with c. 10 elongate setae, dorsal surface apparently without hairs. Lacinia inconspicuous, almost invisible. Galea narrow and fairly elongate, fusiform. Terminal palpomere of maxillary palpus narrow and elongate, slightly curved, slightly narrowed towards apex. Terminal palpomere of labial palpus large and fairly wide, securiform, though apical margin much shorter than lateral margin, slightly longer than inner margin. Both palpi rather densely pilose. Lateral plate of maxilla inconspicuous. Ventral surface of head rather short. Antenna rather short and wide, depressed, 7th-8th antennomeres slightly >2 × as wide as long. Microreticulation absent, puncturation moderately dense, moderately coarse, surface impilose, highly glossy. Gula almost impilose.

Pronotum (Fig. 436). Rather wide, distinctly trpezoidal, dorsal surface on disk rather depressed, lateral parts almost perpendicular, therefore lateral margin not visible from above. Base clearly wider than apex, lateral margins as seen from above obliquely narrowed towards apex. Apex barely convex, apical angles barely produced, widely rounded. Apex not margined. Lateral margins gently but evenly convex, finely margined, lateral channel absent, margins not at all explanate. Basal angles evenly rounded off, base almost straight, unmargined. Surface without median line. Microreticulation absent,



Figs 274a-i. *Cryptocephalomorpha australica*, spec. nov. Details of head and genitalia. For legends see fig. 269.

puncturation rather dense, fairly coarse, surface impilose, highly glossy.

Elytra (Figs 436, 601). Rather elongate, faintly narrowed towards apex, rather depressed on disk. Lateral parts distinctly incurved ventro-medially. Apex wide, truncature evenly convex, markedly incurved towards suture, barely dehiscent, lateral apical angles very widely rounded off. Base wide, obliquely convex, basal angles rounded. Basal margin attaining half of distance to suture, whole base including scutellum concealed by base of pronotum. Basal border laterally with several delicate setae. Marginal channel very narrow, completely concealed. Umbilical pores apparently absent. Scutellar pore absent. Striae including sutural stria absent. Microreticulation absent, puncturation rather coarse and dense, surface highly glossy. Wings full.

Lower surface. Anterior border of prosternum in middle with well developed, slightly protruding, anteriorly glandular and pilose boss. Prosternal process rather elongate, far surpassing procoxae, very narrow, surface in front of coxae depressed, margined inside of procoxae, between coxae very narrow, high, laminate, apex gently convex, extremely narrow, markedly laminate, surface shortly pilose. Metepisternum elongate, >2 × as long as wide, posteriorly not hollowed nor bent. Abdominal sterna without elongate setae, with moderately coarse, fairly sparse puncturation, but apparently without pilosity. Terminal sternum in ♂ apparently with 1 rather short seta, sparsely punctate, impilose. ♂ terminal sternum without glandular, densely pilose area.

Legs. Moderately elongate, 1st tarsomere of protarsus wider than long, tibial groove of profemur deep, symmetric, anterior border almost straight. Femora moderately wide, tibiae rather elongate, but feebly widened. Metatibia rather elongate, >6 × as long as wide, 1st tarsomere of metatarsus >1.5 × as long as wide. ♂ protarsus not widened. In ♂ 2nd-4th tarsomeres of all tarsi biseriately squamose, but 2nd tarsomere of metatarsus only medially with traces of squamulae.

♂ genitalia (Figs 274d-i). Genital ring rather wide, ovalish, almost symmetric, with rather wide apex, with large, symmetric, rather deeply excised base. Sternum VII symmetric, apically not membraneous, base very deeply concave, basal angles acute. Aedeagus rather short and wide, depressed, evenly narrowed towards apex, symmetric. Basal part very long, markedly bent. Lower surface almost straight. Apex acute. but tip slightly rounded off. Orifice elongate, internal sac rather simply folded. Both parameres rather large, triangular, left more than right, both with membraneous area at upper part. Right paramere elongate, with obtuse apex, left paramere with acute apex, both apparently without apical setae.

♀ genitalia. Unknown.

Variation. Unknown.

Vivipary. Not confirmed due to lack of females.

Habits. Unknown. Holotype collected in November.

Distribution (Fig. 656). Northern Queensland. Known only from type locality.

Material examined (1). Only the holotype.

Etymology. The name refers to the distribution of this species.

7.7. Doubtful species

Six species remain doubtful, because the types are lost and the species belong to very difficult species-groups in which species differentiation is almost impossible without examination of ♂ genitalia. In most cases the number of species in the respective species-groups is large and several species compete to be conspecific with the respective named species. Usually the descriptions are so vague that no reliable identification or synonymization is possible.

Adelotopus aphodioides Westwood, 1853

Adelotopus aphodioides Westwood, 1853, p. 404; Newman 1856, p. 128; Castelnau 1867, p. 33; 1868, p. 119; Blackburn 1901a, p. 18; Notman 1925, p. 7, 10, 28; Csiki 1933, p. 1634; Moore 1967, p. 321; Moore et al. 1987, p. 49.

Type locality. From description: "Adelaide", South Australia.

This species belongs to the most numerous and taxonomically most difficult species-group. In the material available the name has been attached to at least 8 different species. Without examination of the types it is virtually impossible to identify this species. The types, however, have been not found in OUM nor in BMNH and are presumably lost.

Adelotopus cornutus Castelnau, 1867

Adelotopus cornutus Castelnau, 1867, p. 31; 1868, p. 117; Notman 1925, p. 6, 28; Csiki 1933, p. 1635; Moore et al. 1987, p. 50.

Type locality. From description: "Arnheim's Land", Northern Territory.

According to the description this species is characterized by two small horn-like tubercles on the head. Otherwise, however, the description is very poor. Because the types have been apparently lost (R. Poggi in litt.) and no specimen with the mentioned character has been found in the available material, for the present this is regarded a doubtful species. Perhaps the "tubercles" of the holotype may have been even an artefact.

Adelotopus hydrobioides Westwood, 1853

Adelotopus hydrobioides Westwood, 1853, p. 406; Blackburn 1901a, p. 18, 19; Notman 1925, p. 6, 10, 29; Csiki 1933, p. 1635; Darlington 1968, p. 241; Moore et al. 1987, p. 51.

Type locality. From description: "Melbourne", Victoria.

This species belongs also to a diverse and taxonomically very difficult group, in which species distinction is only possible by examination of the ♂ genitalia, and additionally by the degree of microsculpture of the surface. Like in *A. aphodioides* the name *hydrobioides* has been attached to many different species in the available material, thus demonstrating that identification of this species is impossible without examination of the types. These should be located either in BMNH or in OUM, but have not been found in either collection and are presumably lost.

Adelotopus inquinatus Newman, 1842

Adelotopus inquinatus Newman, 1842, p. 366; Westwood 1853, p. 407; Lacordaire 1854, p. 154; Notman 1925, p. 29; Csiki 1933, p. 1635; Moore et al. 1987, p. 51.

Type locality. From description: "Porth Philip, South Australia", Victoria.

Westwood (1853) already quoted *A. inquinatus* as a var. of *A. haemorrhoidalis* Erichson. Sloane (1920) synonymized both names, stating that *inquinatus* was synonymous with *haemorrhoidalis*. This opinion was followed by Notman (1925), Csiki (1933) and Moore et al. (1987). Since it was shown in the present paper that the *haemorrhoidalis*-complex includes three very similar species differentiated best by their ♂ genitalia, it may be possible, that the name *inquinatus* refers actually to another species than *haemorrhoidalis*. This question is at present not resolvable, because the types have not be found in BMNH and are presumably lost. Hence *A. inquinatus* must be ranked as a doubtful species.

Adelotopus papuanus Gestro, 1893

Adelotopus papuanus Gestro, 1893, p. 287; Ritsema 1909, p. 254; Notman 1925, p. 8, 29; Csiki 1933, p. 1636; Darlington 1968, p. 241.

Type locality. From description: "Ighibireio, lungo il Kemp Welch", Neu Guinea.

In his description, Gestro (1893) compared this species with the Australian *A. bimaculatus* Macleay on behalf of the elytral markings. Otherwise, however, the description is rather poor, and this species is at present not identificable and must be ranked as doubtful, because the type(s) have been probably lost (R. Poggi in litt.).

Adelotopus scolytides Newman, 1842

Adelotopus scolytides Newman, 1842, p. 366; Westwood 1853, p. 408; Lacordaire 1854, p. 154; Sloane 1920, p. 177, 178; Notman 1925, p. 6, 29; Csiki 1933, p. 1636; Moore et al. 1987, p. 52.

Type locality. From description: "Porth Philip, South Australia", Victoria.

This name has been also extensively quoted in the literature and it is attached to several different species in the available material, though most commonly to *A. dubius*, spec. nov. and its subspecies. According to Sloane (1920) *A. scolytides* is a species having a scutellar pore, but this had been not mentioned in the original description nor in Notman's key (1925) and is therefore uncertain, because even Sloane (1920) had apparently no access to the type(s). Since the poor description does not settle the question, whether *A. scolytides* has a distinct reddish apex of the elytra or not, different authors had different opinions about *A. scolytides*. Because it had been described from Victoria (Port Philip, wrongly quoted South Australia) where several very similar species occur, the poor description could rely on several species. Hence *A. scolytides* must be still rated as doubtful, because the type(s) have not been found in BMNH and are presumably lost.

7.8. Species erroneously recorded from Australia

Pseudomorpha confusa Notman, 1925

Pseudomorpha confusa Notman, 1925, p. 15, 20, 31; Csiki 1933, p. 1638; Ogueta 1967, p. 218; Moore et al. 1987, p. 61.

Type locality. From description: "Australia".

This species was described as coming from "Australia". The description shows that it is certainly a species of *Pseudomorpha* and that it belongs to the main body of the genus that includes the most apomorphic species. Recently Ogueta (1967) identified *A. confusa* as a species from Argentinia. Hence it does not belong to the Australian fauna.

8. Reconstructed Phylogeny

8.1. Systematic position of the subfamily Pseudomorphinae

Some ideas to the phylogenetic relations within Pseudomorphinae have been recently expressed (Baehr 1994a), but there are no new ideas to the still rather enigmatic position of the whole subfamily. Even the study of Arndt (1993) on the larvae of Carabidae did not yield any new ideas to the relationships of the Pseudomorphinae beyond the opinions expressed by Moore (1964), and Erwin (1981, 1985, 1991) and Erwin & Sims (1984) on the other hand. So the systematic position of Pseudomorphinae within Carabidae is still unsettled and generally shall be left untouched in this paper. Nevertheless, Pseudomorphinae are most probably monophyletic, although the character diversity within the subfamily is great (see below).

8.2. Phylogenetic relationships of the genera of the subfamily Pseudomorphinae

The phylogenetic relationships within the Pseudomorphinae are difficult to treat mainly for the following reasons:

1. The systematic position of the whole subfamily is unsettled (see above), therefore the sister group (adelphotaxon) is still unknown and outgroup comparisons are difficult and can be made only on a rather uncertain and wide scale basis.
2. Due to the highly specialized habits reductions of external morphological characters are common (e.g. in chetotaxy).
3. For the same reason (high specialization) parallel evolution is common and considerably impedes phylogenetic reasoning.
4. Although the subfamily as a whole is and perhaps also most genera are presumably rather old, at least the larger genera are apparently in a period of rapid evolution and specification which makes even species distinction difficult (see Baehr 1992a).
5. Observations on biology which could aid in species distinction and could be used as a means for phylogenetic reasoning are generally very poor.
6. Rather few larvae are known and even some larvae alluded to this subfamily are perhaps questionable (Erwin 1981). Since not even of all genera and subgenera larvae are known, larvae do at present not give as much information as they are expected to yield according to the supposed myrmecophilous habits of Pseudomorphinae in general.
7. The material at hand consists to a large part of old, inaccurately labelled specimens, or in many species material is at present so scarce, that even the real distribution of most species is virtually unknown.

Nevertheless, a general account of the relationships of the genera of Pseudomorphinae has been recently attempted (Baehr 1994a) and rather few items have to be added here or must be changed. In the mentioned congress paper a preliminary cladogram of the supposed relationships had been presented, the character analysis and the tables showing the distribution of character states throughout the genera, however, had been omitted for saving space. Hence this is made up here.

The following considerations are based on a cladistic analysis of the genera in the sense of Hennig (1966). The cladogram (Fig. 275) is based on the examination of 13 American and 4 Australian taxa of *Pseudomorpha* and of all taxa of the other genera known to me, as well as on the known larvae. For used characters and their states and the distribution of the character states in the genera (data matrix) see below tabs 4 and 5.

Fig. 97 shows the female genitalia of all genera. These are especially useful for phylogenetic considerations, because within genera the female genitalia are less variable than the male genitalia, but show quite well the generic differences and also some very obvious trends. Generally, female genitalia remember those of other carabid groups related to ants. But it should be once more stressed that the stylomeres of *Sphallomorpha* are basically similar to those of other Carabidae. Within this genus but minor differences in reduction of some setae occur. In *Adelotopus* the stylomeres are fused together and now form a depressed plate. This configuration of the stylomeres is highly apomorphic but very similar throughout the genus and is also similar in the genera *Cainogenion* and *Paussotropus*, although

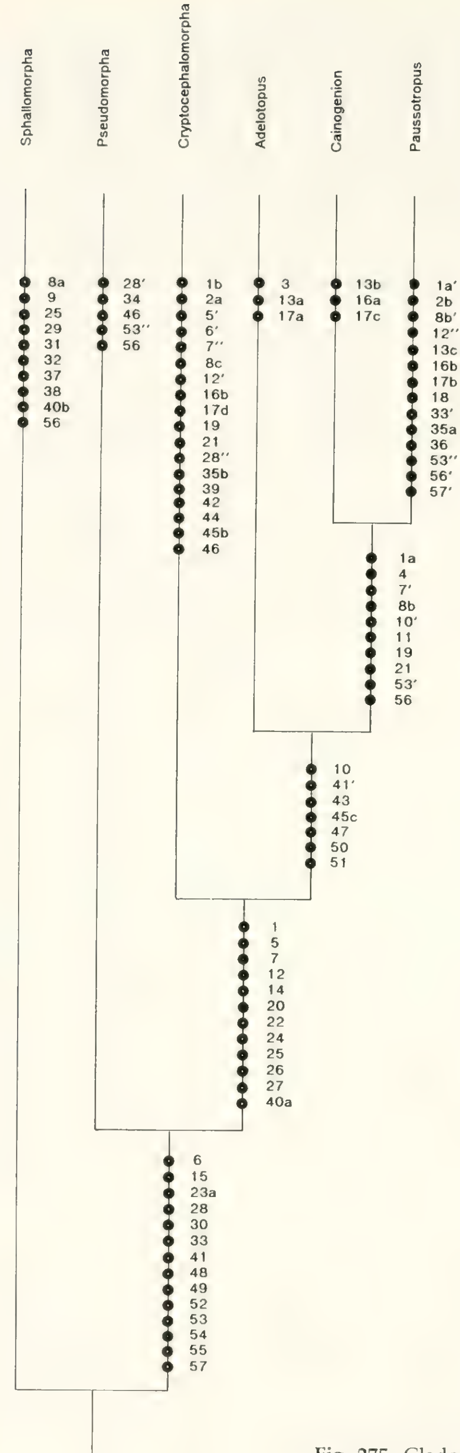


Fig. 275. Cladogram of the supposed relationships of the genera of Pseudomorphinae, based on tables 4 and 5. For explanation of numbers see tab. 4 and tab. 5.

in external morphology both last genera differ considerably from *Adelotopus*. *Cryptocephalomorpha* shows a highly apomorphic state in the marked elongation of both stylomeres. Contrary to all Australian genera the high character diversity of the stylomeres in *Pseudomorpha* should be noted. The elongate stylomeres of the evolved species of *Pseudomorpha*, but also those of *Cryptocephalomorpha*, recall oviposition in crevices, presumably under bark, whereas those of the *Adelotopus*-lineage are perhaps evidence of a secondary reduction due to a different behaviour of oviposition – actually "larviposition" – perhaps in ants nests.

Chetotaxy is extremely different in the pseudomorphine genera, but even within some of the larger genera. Generally, many sets of fixed setae are reduced in number or are lost within Pseudomorphinae, but in some instances secondary augmenation of setae occurs. Table 3 shows the principal states of chetotaxy in the pseudomorphine genera.

Tab. 3. Chetotaxy in the pseudomorphine genera, showing gradual loss of setae. Most setae counted on either side, but labral and median mental setae counted together. Abbreviations of genera: **Sphal:** *Sphallomorpha*; **Pseud:** *Pseudomorpha*; **Crypt:** *Cryptocephalomorpha*; **Adel:** *Adelotopus*; **Cain:** *Cainogenion*; **Pauss:** *Paussotropus*. Abreviations of setae: supraorb: supraorbital; preorb: preorbital; clyp: clypeal; labr: labral; ment.med; median mental; ment.lat: lateral mental; gloss: glossal; gul. gular; postorb: postorbial; suborb: suborbital; pron.ant: anterior pronotal; pron.post: posterior pronotal; proeps: proepisternal; scut: scutellar; marg: elytral marginal (fixed setae in marginal channel); lat: elytral lateral (on border); ♂ st VII: ♂ sternal; ♀ st VII: ♀ sternal.

	Sphal	Pseud	Crypt	Adel	Cain	Pauss
supraorb	0-1	0-1	0	0	0	0
preorb	0-1	0	0	0	0	0
clyp	1	1	many	1	1-5	0
labr	2-6	4-6	0	2-4	4-10	2
ment.med	0-2	2	0	0	0	0
ment.lat	4-18	2-12	0	2-10	0	0
gloss	4-8	1-many	5-8	4-8	1-8	many
gul	1-4	0-1	0	0	0	0
postorb	2-5	1-5	5-8	many	many	many
suborb	2-16	many	0	0	0	0
pron.ant	1-3	1	0	0	0	0
pron.post	0-8	0-1	0	0	0	0
proeps	3->20	0	0	0	0	0
scut	1	1	0	0-1	0	0
marg	11-40	9-15	0-7	2-12	3-6	0
lat	1-5	many	0-many	0-many	many	many
♂ st VII	1-12	2-3	0-1	0-16	0	0
♀ st VII	2-18	2-3	0-2	0-16	0	0

In the following list the phylogenetic status of the used character states is determined, primarily by use of generalized outgroup comparisons with a "normal" carabid type, because the nearest relatives of Pseudomorphinae are still unknown. It should be stressed that the apomorphic states of many of the used characters are obviously adaptations to the life under bark of trees or by ants. For these reasons parallel evolution may have been rather common events, but there are also some obvious morphoclines due to progressive adaptation. Although I do not believe that highly adaptative characters are less useful for generating of phylogenetic relationships, I recognize that such characters may be more subject to parallel evolution than others. So the cladogram should be taken with precaution for possible paralellisms. States 1-52 denominate characters of the adult, states 53-57 those of larvae. It must be stressed that I know the larvae of *Sphallomorpha* and *Pseudomorpha* only from the literature. In particular the status of the galea of the larva in *Sphallomorpha* (2- or 1-segmented) should be reexamined, and larvae of the more plesiotypic species of this genus and of *Pseudomorpha* (especially the species of *Notopseudomorpha*) should be examined. Moreover, all larvae described in this paper are 1st instar larvae, whether several of the other are larvae of later stages. Hence the use of the larvae for constructing the cladogram without differentiation of the stage may be disputable.

Tab. 4. Character states used for the construction of phylogenetic relationships of the genera of Pseudomorphinae. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophe (', '', etc.).

1. Tarsus elongate: plesiomorphic by outgroup comparison; tarsus shortened (1) or short, not depressed (1a) or very short, cylindrical (1a') or very short, depressed (1b): apomorphic. The apomorphic states are generally connected with other apomorphic features. The extremely shortened but either cylindrical or depressed tarsi of *Paussotropus* and *Cryptocephalomorpha*, respectively, represent independently evolved apomorphic states.

2. Tibia narrow, elongate: plesiomorphic by outgroup comparison; tibia shortened and widened (2a) or very wide (2b): apomorphic for the same reasons as under 1.

3. Lower edge of the eye unbordered: plesiomorphic by outgroup comparison; lower edge bordered (3): apomorphic.

4. Dorsal surface not or sparsely pilose: plesiomorphic by outgroup comparison; dorsal surface densely pilose (4): apomorphic.

5. Mouth prognathous: plesiomorphic by outgroup comparison; mouth rather orthognathous (5) or markedly orthognathous (5'): apomorphic, perhaps due to specialized diet or feeding habitus.

6. Labrum on same level with clypeus: plesiomorphic by outgroup comparison; labrum separated from clypeus by deep cleft (6) or completely covered by clypeus (6'): different apomorphic states of a morphocline, presumably connected with the ventral shift of the mouth parts.

7. Labrum large: plesiomorphic by outgroup comparison; labrum small (7) or very small (7') or invisible (7''): apomorphic states of a morphocline for the same reasons as under 6.

8. Mandible large, rather compact: plesiomorphic by outgroup comparison; mandible very large, extremely deplanate (8a) or rather small, moderately deplanate (8b) or rather small, very deplanate (8b') or tiny (8c): different apomorphic states, those of 8b considered states of a morphocline.

9. Mandible without fringe of setae on ventro-medial margin: plesiomorphic by outgroup comparison; mandible with dense fringe of setae on ventro-median border (9): apomorphic.

10. Lateral plates of mentum small: plesiomorphic by outgroup comparison; lateral plates large enlargened (10) or very large (10'): apomorphic, two states of a morphocline, perhaps as adaptation to myrmecophilous habits.

11. Lateral plates of mentum convex: plesiomorphic by outgroup comparison; lateral plates angulate (11): apomorphic.

12. Antenna elongate: plesiomorphic by outgroup comparison; antenna shortened (12) or short (12') or very short (12''): apomorphic, presumably connected with more decided mymecophilous habits.

13. Lower border of eye convex: plesiomorphic by outgroup comparison; lower border straight (13a) or angulate (13b) or deeply hollowed (13c): different apomorphic states, presumably connected with increasingly myrmecophilous habits.

14. Supraorbital seta present: plesiomorphic by outgroup comparison; supraorbital seta absent (14): apomorphic.

15. Preobital seta present: perhaps plesiomorphic by ingroup comparison, since this has been reduced also within genera where it is present in the otherwise most plesiomorphic species; preobital seta absent (15): apomorphic.

16. Clypeus bisetose: plesiomorphic by outgroup comparison; clypeus polysetose (16a) or asetose (16b, c): different apomorphic states.

17. Labrum quadrisetose: plesiomorphic by outgroup comparison; labrum bisetose (17a) or 6-setose (17b) or polysetose (17c) or asetose (17d): different apomorphic states, either due to increased general pilosity of surface, or to reduction of labrum.

18. Postorbital setae present: plesiomorphic by outgroup comparison; postorbital setae absent (18): apomorphic.

19. Suborbital setae present: presumably plesiomorphic by ingroup comparison, because suborbital setae are also reduced within genera, where they are present in the otherwise most plesiomorphic species; suborbital setae absent (19): apomorphic, presumably independently reduced in at least two lineages.

20. Mentum bisetose: plesiomorphic by outgroup comparison; mentum asetose (20): apomorphic.

21. Lateral mental setae present: plesiomorphic by outgroup comparison; lateral mental setae absent (21): apomorphic, presumably independently reduced in at least two lineages.

22. Gular setae present: plesiomorphic by outgroup comparison; gular setae absent (22): apomorphic.

23. 1 anterior marginal pronotal seta present: plesiomorphic by outgroup comparison; many anterior marginal pronotal setae present (23a) or setae absent (23b): different apomorphic states.

24. Posterior marginal pronotal seta present: plesiomorphic by outgroup comparison; posterior marginal pronotal seta absent (24): apomorphic. All mentioned reductions of fixed setae on head and pronotum are perhaps connected with increasing myrmecophilous habits.

25. Glossa bisetose: plesiomorphic by outgroup comparison, because this is the most common and presumably plesiomorphic state within several carabid groups; glossa polysetose (25): apomorphic.

26. Galea of normal shape: plesiomorphic by outgroup comparison; galea very small, concealed (26): apomorphic, connected with the ventral shift of the mouth parts.

27. Gula elongate: plesiomorphic by outgroup comparison; gula reduced and short (27): apomorphic, also connected with the ventral shift of the mouth parts.

28. Maxillary and labial palpi relatively similar and both moderately triangular: plesiomorphic by outgroup comparison; palpi dissimilar, maxillary palpus fainly triangular, labial palpi markedly triangular (28) or very dissimilar, maxillary palpi not triangular, labial palpus markedly triangular (28a) or extremely dissimilar, maxiallary palpus tiny, not triangular, labial palpus huge, markedly triangular (28b): apomorphic, presumably two differently evolved apomorphic states, perhaps related to increasing myrmecophilous habits.

29. Mental tooth elongate and acute: presumably plesiomorphic by outgroup comparison; mental tooth obtuse or absent (29): apomorphic.

30. Striation of elytra distinct, striae well impressed: plesiomorphic by outgroup comparison; striation reduced, striae superficial or absent (30): apomorphic, perhaps connected with increasing myrmecophilous habits. The brackets for the status of *Cainogenion* and *Paussotropus* in tab. 4 refer to the coriaceous surface in both genera that obscure the striation.

31. Lateral margin of elytra with fringe of elongate setae at least in anterior half: plesiomorphic by outgroup comparison; lateral margin of elytra with few setae only behind shoulder (31a) or asetose (31b): different apomorphic states, the final status presumably independently evolved within different genera.

32. ♂ sternum VII at posterior border convex: plesiomorphic by outgroup comparison; ♂ sternum posteriorly excised (32): apomorphic.

33. Body rather wide and depressed: plesiomorphic by outgroup comparison; body narrow and convex (33) or very narrow, cylindrical (33'): apomorphic with stages of one or several morphocline(s), perhaps also convergent in some lineages.

34. Wings present: plesiomorphic by outgroup comparison; wings absent (34): apomorphic.

35. ♂ aedeagus elongate: plesiomorphic by outgroup comparison; ♂ aedeagus short and parallel with very wide lateral walls (35a) or short and widened, with normal lateral walls (35b): two different apomorphic states.

36. Orifice of ♂ aedeagus elongate: plesiomorphic by outgroup comparison; orifice short (36): apomorphic.

37. Internal sac of ♂ aedeagus simple: plesiomorphic by outgroup comparison; internal sac consisting of two parts, one markedly denticulate (37): apomorphic.

38. Parameres rather similar in shape and size: plesiomorphic by outgroup comparison; parameres dissimilar (38a, b, c, d): different apomorphic states, certainly independently evolved in all lineages.

39. Parameres without lateral membraneous part: plesiomorphic by outgroup comparison; parameres with membraneous part (39): apomorphic.

40. ♂ genital ring symmetric: plesiomorphic by outgroup comparison; ♂ genital ring asymmetric (40a, b): different apomorphic states, independently evolved in the two lineages.

41. ♂ sternum VIII completely divided: plesiomorphic by outgroup comparison; ♂ sternum VIII partly divided (41) or completely fused (41'): apomorphic states of a morphocline.

42. ♂ sternum VIII asymmetric: perhaps plesiomorphic due to common ocurrence; ♂ sternum VIII symmetric (42): apomorphic.

43. Sternum VII in both sexes with ambulatory setae: plesiomorphic by outgroup comparison; ambulatory setae absent, many short hairs present (43): apomorphic.

44. ♀ tergum VIII of normal shape, not very elongate: plesiomorphic by outgroup comparison; ♀ tergum VIII very elongate (44): apomorphic.

45. ♀ stylomere 2 dentiform: plesiomorphic by outgroup comparison; ♀ stylomere 2 elongate (45a, b) or both stylomeres united, depressed and lobiform (45c): different apomorphic states.

46. ♀ stylomere 1 normally shaped, not elongate: plesiomorphic by outgroup comparison; ♀ stylomere 1 elongate (46a) or very elongate (46b): different apomorphic states.

47. ♀ stylomere 1 and 2 separated: plesiomorphic by outgroup comparison; both stylomeres fused together (47): apomorphic. The lobiform and fused stylomeres are presumably due to a derived mode of giving birth which is at present unknown.

48. Ventral ensiform setae on ♀ stylomere 2 present: plesiomorphic by outgroup comparison; ventral ensiform setae absent (48): apomorphic.

49. Dorsal ensiform seta on ♀ stylomere 2 present: plesiomorphic by outgroup comparison; dorsal ensiform seta absent (49): apomorphic.

50. Nematiform setae on ♀ stylomere 2 situated subapically: plesiomorphic by outgroup comparison; nematiform setae situated apically (50): apomorphic.

51. Nematiform setae on ♀ stylomere 2 in deep furrow: plesiomorphic by outgroup comparison; nematiform setae not in furrow: apomorphic. Reduction of the setae on the stylomeres is perhaps also due to specialized modes of giving birth as mentioned under 47.

52. Parturition oviparous: plesiomorphic by outgroup comparison; parturition larviparous (52): apomorphic. The apomorphic state is perhaps another adaptation to myrmecophilous habits.

53. Larva elongate, not physogastric: plesiomorphic by outgroup comparison; larva widened, slightly physogastric (53a) or physogastric (53a', b) or markedly physogastric (53a''): different apomorphic states, in part due to convergence, in part states of a morphocline.

54. Head of larva large, not elongate: plesiomorphic by outgroup comparison; head small small, slightly elongate (54) or very small, markedly elongate (54'): apomorphic states of a morphocline.

55. Legs of larva rather elongate: plesiomorphic by outgroup comparison; legs short and small (55): apomorphic.

56. Galea of larva 2-segmented: plesiomorphic by outgroup comparison; galea 1-segmented (56) or absent (56'): apomorphic states of a morphocline.

57. Head of larva without club-shaped or fungiform, or apically split setae: plesiomorphic by outgroup comparison; head with club-shaped or fungiform setae (57) or with tridentate setae (57'): either different apomorphic states, or apomorphic states of a morphocline, in which the tridentate, apically split setae were derived from club-shaped or fungiform setae.

Tab. 5. Character states of the genera of Pseudomorphinae, numbered as in tab. 4. –: plesiomorphic state; number: apomorphic state; ?: state unknown. Other abbreviations as in tab. 3 and 4.

	Sphal	Pseud	Crypt	Adel	Cain	Pauss
1.	–	–	1b	1	1a	1a'
2.	–	–	2a	–	–	2b
3.	–	–	–	3	–	–
4.	–	–	–	–	4	4
5.	–	–	5'	5	5	5
6.	–	6	6'	6	6	6
7.	–	–	7''	7	7'	7'
8.	8a	–	8c	–	8b	8b'
9.	9	–	–	–	–	–
10.	–	–	–	10	10'	10'
11.	–	–	–	–	11	11
12.	–	–	12'	12	12	12''
13.	–	–	–	13a	13b	13c
14.	–	–	14	14	14	14
15.	–	15	15	15	15	15
16.	–	–	16b	–	16a	16c
17.	–	–	17d	–,17a	17c	17b
18.	–	–	–	–	–	18
19.	–	–	19	–	19	19
20.	–	–	20	20	20	20
21.	–	–	21	–	21	21
22	–	–	22	22	22	22
23.	–	23a,23b	23a	23a	23a	23a
24.	–	–	24	24	24	24
25.	25	–,25	25	25	25	25
26.	–	–	26	26	26	26
27.	–	–	27	27	27	27
28.	–	28a	28b	28	28	28
29.	29	–	–	–	–	–
30.	–	30	30	30	(30)	(30)
31.	31a	–	–,31b	–,31b	–	–
32.	32	–	–	–	–	–
33.	–	33	33	33	33	33'
34.	–	–,34	–	–	–	–
35.	–	–	35b	–	–	35a
36.	–	–	–	–	–	36
37.	37	–	–	–	–	–
38.	38a	–	–,38d	–,38b	–,38c	–
39.	–	–	39	–	–	–
40.	40b	–	40a	40a	40a	40a
41.	–	41	41	41'	41'	41'
42.	–	–	42	–	–	–
43.	–	–	–	43	43	43
44.	–	–	44	–	–	–
45.	–	–,45a	45b	45c	45c	45c
46.	–	–,46a	46b			
47.	–	–	–	47	47	47
48.	–	48	48	48	48	48
49.	–	49	49	49	49	49
50.	–	–	–	50	50	50
51.	–	–	–	51	51	51
52.	–	52	?	52	52	52
53.	–	53b	?	53a	53a''	53a''
54.	–	54	?	54	54	54'
55.	–	55	?	55	55	55
56.	56(?)	56(?)	?	–,56	56	56'
57.	–	57	?	57	57	57'

The cladogram (Fig. 275) illustrates the postulate that the genera *Adelotopus*, *Cainogenion*, and *Paussotropus* are closely related, and again that *Cainogenion* and *Paussotropus* form the adelphotaxon of *Adelotopus*. In several characters there is a clear gradient from plesiomorphic to apomorphic states from *Adelotopus* through *Cainogenion* to *Paussotropus*.

Cryptocephalomorpha is in many character states highly apomorphic and in several characters it shows actually the most apomorphic state of all. I postulate it to be related to the *Adelotopus*-*Cainogenion*-*Paussotropus*-lineage. It may represent an independent offspring of an *Adelotopus*-like ancestor.

Sphallomorpha and *Pseudomorpha* have certainly retained the most plesiomorphic status in many character states and both genera even possess character states comparable to a presumable adelphotaxon of Pseudomorphinae (e.g. the rather complete chetotaxy of *Sphallomorpha*, the simple male genitalia of *Pseudomorpha*).

The relationships of *Pseudomorpha* with the other genera are still uncertain, mainly because most of the apparent synapomorphies with the *Adelotopus*-lineage are based on reductions. However, if the ovoviviparous (larviparous) parturation (Nr. 52 in cladogram) in *Pseudomorpha* (Liebherr & Kavanaugh 1985) and the other genera apart from *Cryptocephalomorpha* (where it has not yet been discovered, but may be present) is actually synapomorphic, this would mean a strong argument for this cladogram.

Sphallomorpha is presumably the adelphotaxon of all other genera. It has retained many plesiomorphic characters in chetotaxy, external morphology, and parturation and larval morphology, though has evolved the structure of the aedeagus. In many ways, it shows the ground plan of Pseudomorphinae with which a possible adelphotaxon should be compared.

8.3. Phylogenetic relationships of the subgenera of the genus *Pseudomorpha* Kirby

Within the genus *Pseudomorpha* the marked character diversity in the female genitalia, but also in some external features is to be noted. This corresponds well with the wide distribution of this genus that occurs in the warm temperate parts of the Americas (mainly the southwestern USA, Mexico, and the Antilles, and Argentinia, Paraguay, and southern Brazil) and in southern Australia. To solve the biogeographical questions raised by this distribution pattern, a short and cursory phylogenetic analysis of the subgenera of *Pseudomorpha* is presented below. The character analysis (Tabs 6 and 7) and the cladogram (Fig. 276) are based on about half of the known species only. However, all Australian taxa are as well included as the most primitive South American species and representatives of the more evolved North American groups. So I think that the cladogram expresses the relationships rather correctly. In the following table the phylogenetic status of the used character states is mainly derived from outgroup comparisons with the other pseudomorphine genera, especially the genus *Sphallomorpha*. The adaptative value of most apomorphic character states mentioned below is at present unknown.

Tab. 6. Character states used for the construction of phylogenetic relationships of the subgenera of the genus *Pseudomorpha*. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophe (').

1. Wings present and fully developed: plesiomorphic by outgroup comparison; wings absent (1): apomorphic.
2. Metepisternum elongate: plesiomorphic by outgroup comparison; metepisternum quadrate (2): apomorphic.
3. Body shape wide, ovoid, rather depressed: plesiomorphic by outgroup comparison; body shape narrow, convex, cylindrical (3): apomorphic.
4. Transverse abdominal furrows absent: plesiomorphic by outgroup comparison; abdominal furrows present (4): apomorphic.
5. Clypeus laterally not incised: plesiomorphic by outgroup comparison; clypeus laterally incised (5): apomorphic.

6. Labrum 4-setose: plesiomorphic by outgroup comparison; labrum 6-setose (6): apomorphic.

7. Mental setae present: plesiomorphic by outgroup comparison; mentaL setae absent (7): apomorphic.

8. Glossa 2-setose: plesiomorphic by outgroup comparison; glossa polysetose (8): apomorphic.

9. Supraorbital seta present: plesiomorphic by outgroup comparison; absent (9): apomorphic.

10. Basal antennomere not markedly bulbose, only with the elongate apical seta: plesiomorphic by outgroup comparison; basal antennomere remarkably bulbose and with additional pilosity (10): apomorphic.

11. Anterior pronotal seta present: plesiomorphic by outgroup comparison; anterior pronotal seta absent absent (11a) or numerous setae present (11b): different apomorphic states.

12. Posterior pronotal seta present: plesiomorphic by outgroup comparison; posterior pronotal seta absent (12): apomorphic.

13. Lateral border of pronotum without a fringe of elongate setae: plesiomorphic by outgroup comparison; lateral border with setae (13): apomorphic.

14. Elytral setae absent: plesiomorphic by outgroup comparison; elytral setae present though short (14) or present and very elongate (134'): apomorphic states of a morphocline.

15. Aedeagus short: plesiomorphic by outgroup comparison; aedeagus narrow and elongate (15): apomorphic.

16. Internal sac of aedeagus without distinct torsion in middle: plesiomorphic by outgroup comparison; internal sac with distinct torsion (16): apomorphic.

17. ♂ parameres similar: plesiomorphic by outgroup comparison; ♂ parameres dissimilar (17): apomorphic.

18. ♀ tergum VIII normal-shaped, short: plesiomorphic by outgroup comparison; ♀ tergum VIII elongate (18): apomorphic.

19. ♀ stylomere 1 normal-shaped, rather short: plesiomorphic by outgroup comparison; ♀ stylomere 1 very elongate (19): apomorphic.

20. ♀ stylomere 2 short, dentiform: plesiomorphic by outgroup comparison; ♀ stylomere 2 spiniform and elongate (20): apomorphic.

Tab. 7. Character states of the subgenera of the genus *Pseudomorpha*, numbered as in tab. 6. –: plesiomorphic state; number: apomorphic state. Other abbreviations as in tab. 4.

	Subgenus *Notopseudomorpha*	Subgenus *Pseudomorpha*	Subgenus *Austropseudomorpha*
1.	–	–	1
2.	–	–	2
3.	–	–	3
4.	–	–	4
5.	–	5	5
6.	–	–	6
7.	–	–	7
8.	–	–	8
9.	9	–	–
10.	–	–	10
11.	11a	11a	11b
12.	–	12	12
13.	–	–,13	–
14.	–	14,14'	14
15.	–	15	15
16.	–	–	16
17.	–	–	17
18.	–	–	18
19.	–	–	19
20.	–	20	20

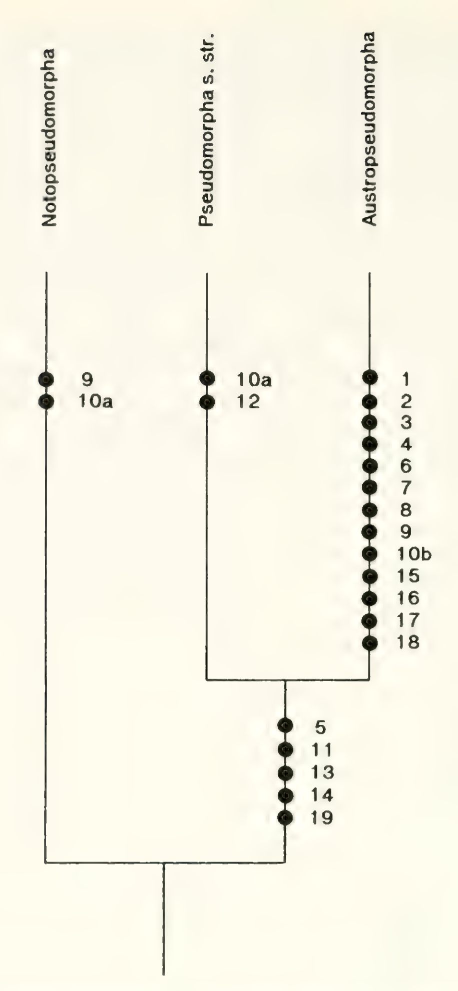


Fig. 276. Cladogram of the supposed relationships of the subgenera of the genus *Pseudomorpha*, based on tables 6 and 7. For explanation of numbers see tab. 4 and tab. 5.

The most plesiomorphic status in many important characters of the genus occupy *Pseudomorpha laevissima* Chaudoir and *P. glabra* Ogueta that live in Argentinia, Paraguay, and southern Brazil. Because they differ in many respects from the other species of *Pseudomorpha*, they are combined in a new subgenus *Notopseudomorpha*. All other American species (so far known to me) and the four known Australian taxa, on the other hand, are more evolved and share some synapomorphies (Fig. 276). Moreover, the cladogram shows that the Australian species are in several respects highly apomorphic, though nevertheless constitute a rather basally branching side group and have been therefore combined to a discrete subgenus *Austropseudomorpha*. Many of the special characters of this subgenus refer to the loss of flight, and hence, perhaps to different habits and way of life of the Australian species compared with their American counterparts. Unfortunately, very little is known in these respects of the American species, and even less of the Australian *Pseudomorpha*.

Since the American species of *Pseudomorpha* have not been revised recently, the cladogram has not been specified in more detail. However, the genus *Pseudomorpha* s. str. seems to divide further in a more basally branching group to which the Australian species are next related, and a more highly evolved group that is mainly characterized by the presence of conspicuous, elongate setae on the disk of pronotum and elytra, and of a transverse row of setae across the neck. These characters might indicate other, unknown, shifts of their way of life, perhaps even closer relations to ants.

8.3.1. Phylogenetic relationships within the subgenus *Austropseudomorpha*, subgen. nov.

The phylogenetic relationships of the four Australian taxa are very difficult to explain, because they are all very similar in shape and structure. With respect to the short and wide body shape and the markedly shorter antenna *P. brevis* may be the most evolved species, whereas *P. i. insignis* may be the most primitive taxon due to the presence of fine puncturation, short and rather declined pilosity of the elytra, and elongate antenna. Both other taxa may be somewhat intermediate.

8.4. Phylogenetic relationships within the genus *Adelotopus* Hope

With regard to the high grade of specialisation of the species of the genus *Adelotopus*, the phylogenetic relationships within this genus are not easily discovered. The high specialisation that was presumably a further adaptation to the life under bark and at the same time with ants, resulted in several reductions of characters, especially in chetotaxy that is generally very much reduced. But there are also some other general trends within the genus: towards narrow, elongate body shape; narrowing or reduction of the lateral margins of pronotum and elytra; reduction of the microreticulation of the surface; shortening of the antenna; shorthening of the legs; development of elytral patterns; general or partly fading of body colour. Although all these trends and reductions finally resulted in highly apomorphic character states, it is sometimes extremely difficult to decide, whether reductions or trends have been parallel events, whether they may represent synapomorphies. For these reasons the following character analysis and the resulting cladogram for the species-groups should be taken even more as preliminary than other cladograms in this volume, and rather as a trend analysis than as a real reconstruction of phylogeny. However, I doubt that a numerical approach of any sort would yield a more reasonable cladogram, because it would likewise not solve the crucial decision: what is homoplasy, what synapomorphy.

I have omitted a formal analysis of the phylogenetic relationships of the species. Due to many parallelisms the resulting cladogram would be perhaps even more dotted with question marks than the cladogram for the species-groups, although certain phylogenetic trends within species-groups are obvious and have been explained in detail. I tried to improve the situation by confining the taxonomic range of the species-groups as much as possible, and by excluding all species from a given species-group that differ even in minor structural characters like chetotaxy or structure of aedeagus. Although colour and pattern may be as good distinguishing characters as others, I do not believe that they play an equal role in defining phylogenetic relationships as other characters perhaps do. Therefore I did not exclude species from a species-group by presence or absence of pattern alone.

Some clusters of character states that are generally connected and some apparently evolutive trends within the genus *Adelotopus* are discussed below briefly.

Size. Although the differences of size within the genus are rather substantial, this feature has not been used for reconstruction of phylogenetic relationships. Generally there is a trend towards smaller size, but this trend is to be seen in several species-groups. *A. dytiscides* is in several respects one of the most plesiotypic species and it is altogether the largest species, whereas all very small species belong to species-groups which also possess other apomorphic character states. Liebherr (1988) summarized the biological significance of changes of body sizes on a wider scale; nevertheless, the ecological significance of decrease of size in *Adelotopus* is unknown, but may be connected with the size of the ants with which they presumably live.

Body shape and structure of surface. By outgroup comparison with the genus *Sphallomorpha* rather wide, ovoid, depressed body shape seems to represent the plesiomorphic state also in *Adelotopus* (e.g. in the *dytiscides*- and *brevipennis*-groups). This is generally combined with very wide, explanate lateral margins of the pronotum and likewise rather wide margins of the elytra. Within the genus this basic shape has been altered in diverse ways: either to a very wide and at the same time extremely short body that has retained the wide lateral margins (e.g. *celeripes*-group); or to a narrow, elongate, dorsally depressed body, likewise with rather wide, channeled lateral margins (e.g. *marginicollis*-group); or to a still rather wide, convex, but on dorsal surface depressed body with still fairly wide lateral borders (e.g. *gyrinoides*-group and allies); or to a rather regularly convex body with narrow lateral borders (e.g. the *politus*-, *multipunctatus*-, and *rubiginosus*-groups and their allies); and finally to

very elongate, highly convex, cylindrical bodies with extremely narrow lateral borders (e. g. the *unicolor-*, *linearis-*, *fasciatus-* and *nemosomoides*-groups) that may be even somewhat depressed on the dorsal surface (*maculipennis*-group). Even the evolution of the cylindrical body shape apparently has occurred several times, but the trend seems to be directed to evolve such body shape. Moreover, a similar, but not so accentuated trend to narrower, longer, rather convex body shape is observed in *Sphallomorpha*. Certainly the acquisiton of a more convex body shape without wide lateral margins could be a further adaptation to mymecophilous habits, because such convex body gives better protection against the attacks of ants, whereas the wide body shape seems to represent a better adaptation for life in crevices and under bark. Since the acqusition of a more convex body shape is commonly associated with the reduction of microreticulation and also puncturation, in those taxa the body is even more difficult to seize because of its smooth surface. As a conclusion I think that the mentioned trends may be caused by increasing myrmecophily of those species or species-groups that exhibit the apomorphic body shape.

Microstructure of surface. The plesimorphic state is apparently that of distinct, about isodiametric microreticulation on the whole surface. Generally the microreticulation is finest on the head and coarsest on the elytra. Whereas microreticulation on the head is rarely reduced, its reduction is very common on the pronotum and even commoner on the elytra. But these events seem to have occurred several times and apparently within most of the larger species-groups. The advantage of the glossy surface is difficult to trace. Although Ball & Shpeley (1983) suggest that a lustrous surface can be protective against enemies, because it can delude a predator about the position of his prey, this explanation may be doubtful with respect to subcorticolous and mainly nocturnal animals as pseudomorphines are. I think that a glossy surface is rather a means for making the body more slippery and more difficult to seize, which may be advantageous for mymecophilous animals. In any case, there must be a strong selection towards a glossy surface.

Reduction of striation of elytra and of puncturation of striae and intervals likewise has occurred several times within different species-groups, and I think for similar reasons. It is worth noting that puncturation is commonly much coarser and denser towards the apex of the elytra, and there punctures may be horseshoe-shaped and the surface may become more or less rough – even in rather glossy species.

Chetotaxy. In *Adelotopus* the chetotaxy is generally far more reduced than in *Sphallomorpha* and *Pseudomorpha*. This applies to the chetotaxy of the mouth parts as well as to that of the body surface. But even within *Adelotopus* chetotaxy is further reduced, especially with respect to the fixed setae on labrum, elytra, and abdomen. In some species-groups their number is gradually reduced, and in certain species-groups some fixed setae are completely lost (e.g. scutellar pore, postmedian umbilical pore of elytra, ambulatory setae on abdominal sterna and on the terminal sternum). As most fixed setae on dorsal and ventral surfaces serve as a means for measuring distances in crevices, their reduction demonstrates that they are perhaps no longer needed. Presumably reduction of chetotaxy likewise reflects the increasing grade of myrmecophily within the genus, or at least that adaptations to the myrmecophilous habits become prevailing over those to the subcorticolous life.

Lateral setae on elytra. The fringe of setae along the lateral margin of the elytra present in all genera except *Sphallomorpha* (although in *Adelotopus* and *Cryptocephalomorpha* present in few species only, and in *Cainogenion* absent in some species), is presumably a synapomorphic state. However, even in almost all species of *Sphallomorpha* a few (1-5) stiff setae directly behind the shoulder can be regarded as derivates of the normal setae on the basal margin that act as proprioreceptors. In the setae on the lateral margin, however, this function does not longer take place. But we must postulate a new important function, because these hairs become more prominent and occupy almost the whole margin of the elytra. As a possible explanation I would propose that they act as a means of defending against ants due to increased myrmecophilous habits. In *Pseudomorpha*, *Cainogenion*, and *Paussotropus* they are supported in their function by the elongate dorsal setae that may act in the same manner. Why this fringe of hairs has been secondarily lost in several lineages of *Adelotopus*, in some species of *Cainogenion*, and in most species of *Cryptocephalomorpha*, is doubtful. But their function was perhaps not longer needed and has been replaced by other means.

Anyway, it seems that this function was not necessary in *Sphallomorpha*. If the explanation given above is right, this would mean that myrmecophilous habits are still less marked in *Sphallomorpha* than in all other genera.

Colour and pattern. As in *Sphallomorpha* the basic colour in *Adelotopus* is perhaps uniformly dark piceous or black. It is retained in several groups of different relationships. The colour and pattern types within the genus, and their different states have been presumably evolved several times in various groups. However, because there are rather few pattern types (e.g. uniformly light colour, red apex of elytra, discal spots or bands on the elytra) it is to be asked, what the advantages of these few pattern types are and why they have been evolved repeatedly so many times. Pseudomorphinae in general and likewise the adults of *Adelotopus* live predominantly under bark and perhaps also in ant nests; moreover, they are apparently all crepuscular or nocturnal. They can fly and have been collected while flying, but they do apparently not commonly fly spontaneously during daytime. Although Erwin (1979) suggested that colour and pattern of arboricolous carabids are the results of selection caused by predators, the evolution of pattern in *Adelotopus* (as well as in *Sphallomorpha*) is not easily understood for the reasons mentioned above. Nevertheless, there must exist a rather strong evolutionary pressure towards evolution of these patterns.

However, in this connexion B. P. Moore (in litt.) drew my attention to the interesting question, whether tree creepers of the genus *Climacteris* in Australia would play a more important role as enemies of pseudomorphines, because these diurnal birds dislodge flakes of bark as part of their regular hunting technique.

Mouth parts. The almost orthognathous direction of the head in *Adelotopus* (and its allies *Cainogenion* and *Paussotropus*) is apomorphic when compared with the "normal" prognathous head of *Sphallomorpha* and *Pseudomorpha*. The shift of the mouth parts caused several changes, some of which are immediate conseqences of this shift, others took place in loose connection with it only. Shortening of the gula, decrease of size of the mandibles, loss of several sets of fixed setae, e. g. the gular, median and lateral mental setae, and perhaps also reduction of size of the galea and lacinia are immediately caused by this shift, whereas the development of a cleft between clypeus and labrum and the partial overlap of the labrum by the clypeus may be indirectly connected with it. The adaptative advantage of this shift is rather obscure. It may be correlated to the development of an armoured body structure, e.g. to protect the wide gula from attacks of aggressive prey, and/or it may be connected with some changes in the feeding methods. For these question, again, our inadequate knowledge about the feeding habits and the diet of pseudomorphines in general and of the species of *Adelotopus* in particular is unadvantageous. The few available observations suggest that at least some species eat ants, but this applies also to certain species of *Sphallomorpha* that possess "normal" shaped mouth parts.

In general, the mouth parts in *Adelotopus* are rather similar throughout the genus and the most obvious differences are in the shape of labrum, lateral plates of the mentum, and palpi, in particular the labial palpi. Although there is apparently the trend to widening of the labial palpi that may be connected with certain changes of feeding behaviour, and there is also the trend to increasing overlap of the labrum by the clypeus that is correlated with decreasing size of labrum, mouth parts present few useful character states for reconstruction of phylogeny.

Legs. In *Adelotopus*, shape and structure of legs show a medium position when compared with the plesiomorphic state in *Sphallomorpha* and *Pseudomorpha* and the apomorphic states in *Cainogenion* and *Paussotropus* and again in *Cryptocephalomorpha*. Originally in *Adelotopus* the femora are moderately widened, and tibiae and tarsi are but fairly shortened and widened. The trend to further shortening and widening of the legs is continued within several species-groups, especially in those that are also apomorphic in other features, e. g. in body shape. It is thus a general trend that eventually led to a highly protective body shape. I think that this is another adapatation to myrmecophilous habits, but it developed at the expense of running ability. Velocity is directly correlated with the length of legs, especially length of tibiae and tarsi. Actually, from my experience, the long-legged *Sphallomorpha*'s are surprisingly agile runners. That may be likewise true for the American *Pseudomorpha*'s, although I do not have personal experience with them and apparently there are no notices in the literature on their running ability. Species of *Adelotopus*, on the other hand, are from my experience still quite agile, but not even as fast runners as most *Sphallomorpha*'s. And even within the genus *Adelotopus* some differences exist. For example specimens of the *dytiscides*-group I collected ran much faster than the cylindrical and short legged ones of the *linearis*- or *maculipennis*- or *seriepunctatus*-groups. In this character, again, adaptations to myrmecophilous habits become apparently prevailing over those to free life. This trend is further continued in the related, even more specialized genera *Cainogenion* and

Paussotropus. Indeed, specimens of *Cainogenion* that I collected were rather sluggish and did not rely upon running away when captured. According to the shape of the legs the running abilities of *Paussotropus* and *Cryptocephalomorpha* may be still poorer. However, I do not have any experience with these beetles and I do not know of any record of their running behaviour in the literature.

Metepisternum. In general the metepisternum is rather elongate and shows no striking pecularities. In some species-groups, however, it is obliquely bent and hollowed behind middle for reception of the enlarged femora. This is certainly an apomorphic feature, the more as this state does not occur in any other pseudomorphine genus. However, within *Adelotopus*, it occurs only in few species-groups that otherwise exhibit many plesiomorphic features. Hence it is possible that it has been secondarily reduced in the other more evolved species-groups, or that it was reduced in some groups only, while the unspecialized state may be plesiomorphic in others, or that it was even indepedently reduced within different lineages.

Male genitalia. The male genitalia within the genus *Adelotopus* are rather diverse and differ mainly in shape, length, shape of apex of aedeagus, and complexity (i.e. degree of folding) of the internal sac. Additionally, some special features are found in single species only. The most plesiomorphic type of the aedeagus in *Adelotopus* is apparently rather narrow and elongate, almost symmetric, with very elongate orifice that is situated about in middle, with a rather rounded apex without any special features, and with a rather simply folded internal sac that lacks the denticulate part present in *Sphallomorpha*. The parameres are originally fairly similar in shape and also in size, but the left paramere is always at least slightly larger than the right. Within the genus shape of the aedeagus is very variable, although normally the species-groups show distinct and similar types. General trends seen within various species-groups are shortening of the aedeagus, more complex folding of the internal sac that becomes twisted two or several times, and more dissimilar size of the parameres.

Female genitalia. Compared with the plesiomorphic and rather "normal" configuration of the stylomeres in *Sphallomorpha* and still in primitive species of *Pseudomorpha*, the structure of the stylomeres in *Adelotopus* (and its allies *Cainogenion* and *Paussotropus*) is highly apomorphic. Both stylomeres are fused to a wide, depressed plate, the ventral and dorsal ensiform setae are apparently lost (but see below), and the nematiform setae are present as apical or subapical setae, and they do not longer originate in a groove. Perhaps even all or some ensiform setae are included in the apical setae, but this is unknown. Different from the situation in *Sphallomorpha*, the number of apical setae varies to a rather large degree. Sternum VII is not divided, though is highly asymmetric. I cannot see a general trend in the female genitalia, although there are differences between species that may be used for species distinction. It is difficult to decide which role during parturation the very unusual structure of the stylomeres in the *Adelotopus*-lineage plays. I suppose that it may an adaptation to larviposition in ant nests, but I have no idea why this structure should be particularly advantageous for this method of parturation.

Secondary sexual characters. Compared with *Sphallomorpha* secondary sexual characters are generally reduced in *Adelotopus*. Only the protarsus is clothed beneath in the males, the mesotarsus is not, and the tarsomeres are barely widened. The terminal sterna are very similar in both sexes, and only in some species the female sternum VI is slightly shorter and less convex at the apex than the male sternum. There are no sexual differences in the chetotaxy of the abdomen, and on sternum VI the ambulatory setae are absent apart from very few species. There is a trend to further reduction of secondary sexual differences within *Adelotopus* and this trend is continued in the related genera *Cainogenion* and *Paussotropus* where no external sexual differences at all exist, because even the vestiture of the male protarsus is reduced. The reduction of sexual differences recalls some changes in mating behaviour, but due to absolute lack of knowledge about the sexual behaviour I have no idea what has changed.

Summary of the character evolution. The evolutionary pattern is very complex in view of the numerous convergences as discussed above. Such pattern is presumably correlated with rather slight ecological differentiation of the genus, but at the same time with rather strong selective pressures that repeatedly resulted in the development of similar apomorphic structures. However, these are combined in a rather heterobathmic pattern in the various species-groups which is presumably caused by different geographical regions and climatic conditions. Altogether, these ample parallelims could be described as "underlying synapomorphies" in the sense of Saether (1990) that are present as latent

potentials that appear here and there in different lineages. The main evolutive trend seems to be an increasing adaptation to myrmecophilous habits, and structural differences perhaps could be caused by the differing ecological conditions offered by the different ant hosts.

In the following list the phylogenetic status of the used character states is mainly derived from outgroup comparisons with the other pseudomorphine genera, especially the genera *Sphallomorpha* and *Pseudomorpha*. Characters no 1-26 are applicable to species-groups, Nr. 27-35 to species within species-groups.

Tab. 8. Character states used for the construction of phylogenetic relationships of the species-groups of the genus *Adelotopus*. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophes (',",''').

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1. Labrum quadrisetose: plesiomorphic by outgroup comparison; labrum bisetose (1): apomorphic. Although this reduction has been taken as synapomorphic, it is uncertain, whether it occurred independently in certain lineages.

2. Scutellar pore present: plesiomorphic by outgroup comparison; scutellar pore absent (2): apomorphic. This reduction certainly occurred several times within certain lineages, because it even happened within well founded species-groups (e.g. *gyrinoides*-group), where very closely related species differ in that state.

3. Labrum large and but feebly overlapped by clypeus, cleft between both rather shallow: plesiomorphic by outgroup comparison; labrum rather small, fairly overlapped, with rather deep cleft (3) or small, deeply overlapped, with deep cleft (3'): apomorphic stages of a morphocline.

4. Labrum anteriorly straight: plesiomorphic by outgroup comparison; labrum perceptibly excised (4) or deeply excised (4'): apomorphic, perhaps parts of a morphocline, but maybe also different apomorphic states.

5. Basal border of elytra line complete or almost so: plesiomorphic by outgroup comparison; border line slightly abbreviated, attaining c. ⅘ of base (5) or attaining c. ¾ of base (5') or attaining c. ½ of base (5") or attaining c. ⅓ of base (5'''): apomorphic with several stages of a morphocline. Perhaps this reduction occurred two or three times in different lineages.

6. Body shape wide, regularly depressed: plesiomorphic by outgroup comparison; body shape depressed and extremely short and wide (6a) or wide though convex and depressed only on disk (6b) or elongate, parellel, depressed on disk (6c) or convex (6d) or cylindrical (6d') or markedly cylindrical (6d"): different apomorphic states, in part also states of a morphocline. The trend to convex and to cylindrical body shape may be connected with increasing myrmecophilous habits.

7. Lateral margin of pronotum widely explanate: plesiomorphic by outgroup comparison; lateral margin not widely explanate, but somewhat chanelled (7) or narrow (7') or extremely narrow (7"): apomorphic, different states of a morphocline that are more or less connected with the trend to convex and narrow body shape.

8. Basal angle of pronotum widely rounded: plesiomorphic by outgroup comparison; basal angle angulate (8): apomorphic.

9. Lateral margin of elytra setose: plesiomorphic by outgroup comparison; lateral margin asetose (9): apomorphic, though this state has been evolved several times in different species-groups.

10. Metepisternum not obliquely bent and hollowed: plesiomorphic by outgroup comparison; metepisternum bent and obliquely hollowed (10a) or secondarily not bent and hollowed (10b): apomorphic, two different states.

11. Umbilical series of elytra with 6 pores at shoulder and 1 pore at or behind middle: presumably plesiomorphic, because all other states except for 7b are further reductions; umbilical series with 6 pores at shoulder (11a) or with 4-5 pores at shoulder (11a') or with 2 pores at shoulder (11a") or with 10-14 pores along whole margin (11b): apomorphic, the reduction series perhaps a series of states of a morphocline. The state 11b is perhaps due to a secondary augmentation of pores. This state, however, strongly recalls the condition in *Sphallomorpha* and hence could be regarded the most plesiomorphic situation. As several other character states in the single species are apomorphic, it is here regarded as apomorphic.

12. Abdomen with many ambulatory setae: plesiomorphic by outgroup comparison; abdomen with 2-3 setae (12) or with 1 seta (12') or without setae (12"): apomorphic, different states of a morphocline.

13. Sternum VI with fringe of long setae: plesiomorphic by outgroup comparison; sternum VI without such fringe (13): apomorphic.

14. Colour unicolourous black: plesiomorphic by outgroup comparison; colour piceous (14a) or reddish-yellowish (14a') or elytra with reddish apex (14b) or elytra with reddish apical-sutural spot (14b') or elytra with very wide reddish apex (14b") or elytra completely red (14b''') or elytra and abdomen basally red, apically black (14c) or elytra with sutural spot (14d) or elytra with discal spots (14e) or elytra with discal band (14e'): different apomorphic states and partly also states of morphoclines. Some states (e.g. reddish apex, or discal spots or bands of elytra) apparently have been independently evolved within different species-groups.

15. Surface more or less dull and with fine puncturation: perhaps plesiomorphic by outgroup comparison; surface highly glossy and with coarse puncturation (15): apomorphic.

16. Surface impilose or with very short, inconspicuous pilosity: plesiomorphic by outgroup comparison; surface with elongate, erect hairs (16a, b): apomorphic, though two independently evolved states.

17. Surface of elytra dull from fine microreticulation or glossy: plesiomorphic by outgroup comparison; surface markedly coriaceous (17): apomorphic.

18. Pronotum without transverse impression: plesiomorphic by outgroup comparison; pronotum with transverse impression (18): apomorphic.

19. Elytra without transverse impression in basal third: plesiomorphic by outgroup comparison; elytra with transverse impression (18): apomorphic.

20. Aedeagus without oblique fold at apex of internal sac: plesiomorphic by outgroup comparison and apparently most simple situation; aedeagus with oblique fold (20): apomorphic.

Tab. 9. Character states of the species-groups of the genus *Adelotopus*, numbered as in tab. 8. –: plesiomorphic state; number: apomorphic state. Other abbreviations as in tab. 4.

species-group	1	2	3	4	5	6	7	8	9	10	11
1. *dytiscides*	1	2	–	–	–	–	–	8	–,9	10a	–
2. *katherinei*	1	2	3'	4	5'	–	–	–	9	10b	–
3. *brevipennis*	1	2	3'	4	5"	–	–	8	9	10b	11a,
4. *atrorufus*	1	2	3'	4	5'	–	–	8	9	10b	11a
5. *marginicollis*	1	2	3'	4'	5"	6c	7	–	9	10a	–
6. *politus*	1	2	3	–	–	6d	7'	–	9	10a	–
7. *exactor*	1	2	3'	4	5	–	7	–	9	10a	–
8. *multipunctatus*	1	2	3	–	5"	6d	7'	–	9	10b	–
9. *obsoletus*	1	2	3'	4	5"	6d	7'	–	9	10b	–
10. *villosus*	1	2	3	–	5"	6d	7'	–	9	10b	–
11. *similis*	1	2	3	–	5"	6d	7'	–	9	10b	11b
12. *tasmani*	1	2	3	–	5'	6d'	7'	–	9	10b	11a
13. *nigricauda*	1	2	3'	4	5"	6d	7'	–	9	10b	11a
14. *seriepunctatus*	1	2	3	–	5'''	6d'	7'	–	9	10b	11a
15. *rubiginosus*	1	2	3'	4	5'''	6d	7'	–	9	10b	11a
16. *laevis*	1	2	3'	4	5'''	6d	7'	–	–	10b	11a
17. *unicolor*	1	2	3'	–	5'''	6d"	7"	–	9	10b	11a
18. *linearis*	1	2	3'	–	5'''	6d"	7"	–	9	10b	11a
19. *celeripes*	–	–	–	–	–	6a	.	–	–	–	–
20. *gyrinoides*	–	–,2	–,3	–	5"	6b	7	–	9	–	11a
21. *punctulifer*	–	2	3	–	5"	6d	7'	–	9	10b	11a
22. *analis*	–	–	3	–	5"	6b	7	–	9	–	11a
23. *paroensis*	–	2	3	–	5"	6d	7'	–	9	10b	11a
24. *fasciatus*	–	2	3	–	5'''	6d'	7'	–	9	10b	11a
25. *nemosomoides*	–	2	3'	–	5'''	6d"	7"	–	9	10b	11a
26. *maculipennis*	–	2	3'	–	5'''	6d"	7'	–	9	10b	11a

21. Aedeagus without spinose band at apex of internal sac: plesiomorphic by outgroup comparison; aedeagus with spinose band (21): apomorphic.

22. Apex of adeagus without triangular flange: plesiomorphic by outgroup comparison; apex of aedeagus with triangular flange: apomorphic.

23. Galea of larva 2-segmented: plesiomorphic by outgroup comparison; galea 1-segmented (23a, b): apomorphic, probably independent reduction.

24. Labial palpus of larva elongate: plesiomorphic by outgroup comparison; labial palpus slightly shortened (24) or short (24'): apomorphic states of a morphocline, but perhaps in parts independently evolved.

25. Antenna of larva elongate: plesiomorphic by outgroup comparison; antenna slightly shortened (25) or short (25'): apomorphic states of a morphocline, but perhaps in parts independently evolved.

26. Setae on head of larva club-shaped or slightly fungiform: plesiomorphic by outgroup comparison; setae markedly fungiform (26a) or tridentate (26b): apomorphic, probably independently evolved states.

The following character shifts are only applicable to species within the species-groups, because they are mostly general trends towards reduction of character states that occurred several times within different species-groups, and that additionally exhibit several intermediary stages. They will be important for the considerations about the phylogenetic relationships within the species-groups:

27. Microreticulation of head present: plesiomorphic by outgroup comparison; microreticulation absent: apomorphic.

28. Microreticulation of surface, especially of elytra, dense, distinct: plesiomorphic by outgroup comparison; microreticulation superficial or absent: apomorphic states of a morphocline, though this reduction occurred several times within different groups and commonly intermediate states are seen. It seems a general trend, the biological sense of which, however, is uncertain.

13	14	15	16	17	18	19	20	21	22	23	24	25	26
–	–	–	–	–	–	–	–	–	–	–	–	–	–
13	–	–	–	–	–	–	?	?	?	?	?	?	?
13	–,14a',e'	–	–	–	–	–	–	–	–	–	24	25	–
13	14b'''	–	–	–	–	–	?	?	?	?	?	?	?
13	14a,a'	–	–	17	111	112	?	?	?	23a	24	25	–
13	–,14b,e'	–	–	–	–	–	20	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	?	?	?	?
13	–,14b	–	–	–	–	–	20	–	–	–	–	–	–
13	–	–	–	–	–	–	20	–	–	?	?	?	?
13	–	–	16a	–	–	–	–	–	–	?	?	?	?
13	14b	–	–	–	–	–	20	–	–	–	–	–	–
13	14b	–	–	–	–	–	?	?	?	?	?	?	?
13	14c	–	–	–	–	–	–	–	–	?	?	?	?
13	14b'	15	–	–	–	–	–	–	–	–	24'	25'	–
13	14a,a'	–	–	–	–	–	20	–	–	23b	24'	25'	26a
13	14a'	–	–	–	–	–	20	–	–	23b	24'	25'	26a
13	–	–	–	–	–	–	?	?	?	?	?	?	?
13	14b,b''	–	–	–	–	–	–	–	–	?	?	?	?
–	–	–	–	–	–	–	–	–	–	?	?	?	?
13	–,14b,e,e'	–	–	–	–	–	–	–	–	–	–	–	–
13	14b	–	–	–	–	–	–	21	–	?	?	?	?
13	14b	–	16b	–	–	–	–	–	–	?	?	?	?
13	14a	–	–	–	–	–	–	–	22	–	–	–	–
13	14e	–	–	–	–	–	–	–	–	–	–	25'	–
13	14b	–	–	–	–	–	20	–	–	?	?	?	?
13	14e	–	–	–	–	–	–	–	–	–	24'	25'	26b

12. Abdomen with many ambulatory setae: plesiomorphic by outgroup comparison; abdomen with 2-3 setae (12) or with 1 seta (12') or without setae (12''): apomorphic, different states of a morphocline.

13. Sternum VI with fringe of long setae: plesiomorphic by outgroup comparison; sternum VI without such fringe (13): apomorphic.

14. Colour unicolourous black: plesiomorphic by outgroup comparison; colour piceous (14a) or reddish-yellowish (14a') or elytra with reddish apex (14b) or elytra with reddish apical-sutural spot (14b') or elytra with very wide reddish apex (14b'') or elytra completely red (14b''') or elytra and abdomen basally red, apically black (14c) or elytra with sutural spot (14d) or elytra with discal spots (14e) or elytra with discal band (14e'): different apomorphic states and partly also states of morphoclines. Some states (e.g. reddish apex, or discal spots or bands of elytra) apparently have been independently evolved within different species-groups.

15. Surface more or less dull and with fine puncturation: perhaps plesiomorphic by outgroup comparison; surface highly glossy and with coarse puncturation (15): apomorphic.

16. Surface impilose or with very short, inconspicuous pilosity: plesiomorphic by outgroup comparison; surface with elongate, erect hairs (16a, b): apomorphic, though two independently evolved states.

17. Surface of elytra dull from fine microreticulation or glossy: plesiomorphic by outgroup comparison; surface markedly coriaceous (17): apomorphic.

18. Pronotum without transverse impression: plesiomorphic by outgroup comparison; pronotum with transverse impression (18): apomorphic.

19. Elytra without transverse impression in basal third: plesiomorphic by outgroup comparison; elytra with transverse impression (18): apomorphic.

20. Aedeagus without oblique fold at apex of internal sac: plesiomorphic by outgroup comparison and apparently most simple situation; aedeagus with oblique fold (20): apomorphic.

21. Aedeagus without spinose band at apex of internal sac: plesiomorphic by outgroup comparison; aedeagus with spinose band (21): apomorphic.

22. Apex of adeagus without triangular flange: plesiomorphic by outgroup comparison; apex of aedeagus with triangular flange: apomorphic.

23. Galea of larva 2-segmented: plesiomorphic by outgroup comparison; galea 1-segmented (23a, b): apomorphic, probably independent reduction.

24. Labial palpus of larva elongate: plesiomorphic by outgroup comparison; labial palpus slightly shortened (24) or short (24'): apomorphic states of a morphocline, but perhaps in parts independently evolved.

25. Antenna of larva elongate: plesiomorphic by outgroup comparison; antenna slightly shortened (25) or short (25'): apomorphic states of a morphocline, but perhaps in parts independently evolved.

26. Setae on head of larva club-shaped or slightly fungiform: plesiomorphic by outgroup comparison; setae markedly fungiform (26a) or tridentate (26b): apomorphic, probably independently evolved states.

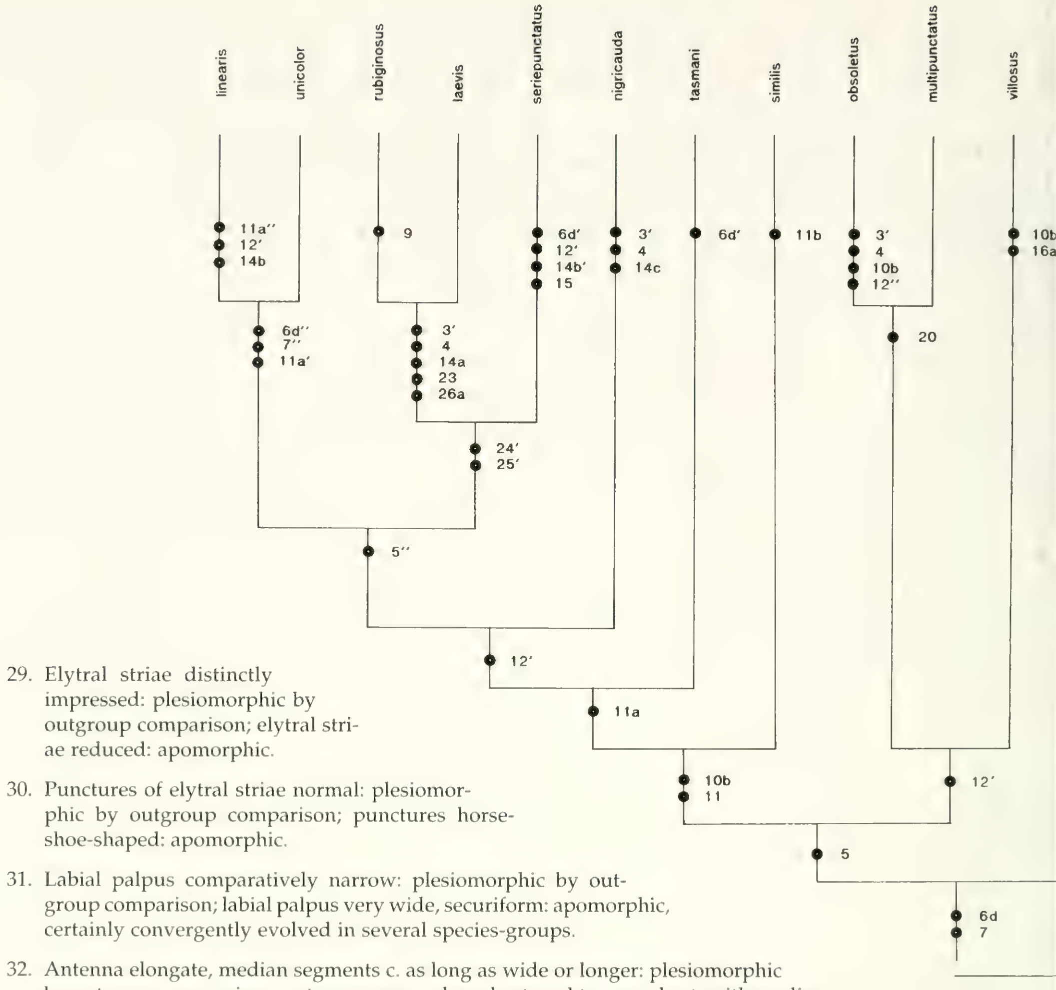
The following character shifts are only applicable to species within the species-groups, because they are mostly general trends towards reduction of character states that occurred several times within different species-groups, and that additionally exhibit several intermediary stages. They will be important for the considerations about the phylogenetic relationships within the species-groups:

27. Microreticulation of head present: plesiomorphic by outgroup comparison; microreticulation absent: apomorphic.

28. Microreticulation of surface, especially of elytra, dense, distinct: plesiomorphic by outgroup comparison; microreticulation superficial or absent: apomorphic states of a morphocline, though this reduction occurred several times within different groups and commonly intermediate states are seen. It seems a general trend, the biological sense of which, however, is uncertain.

Tab. 9. Character states of the species-groups of the genus *Adelotopus*, numbered as in tab. 8. –: plesiomorphic state; number: apomorphic state. Other abbreviations as in tab. 4.

species-group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. *dytiscides*	1	2	–	–	–	–	–	8	–,9	10a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2. *katherinei*	1	2	3'	4	5'	–	–	–	9	10b	–	12''	13	–	–	–	–	–	–	?	?	?	?	?	?	?
3. *brevipennis*	1	2	3'	4	5''	–	–	8	9	10b	11a,a'	12''	13	–,14a',e'	–	–	–	–	–	–	–	–	–	24	25	–
4. *atrorufus*	1	2	3'	4	5'	–	–	8	9	10b	11a	12''	13	14b'''	–	–	–	–	–	?	?	?	?	?	?	?
5. *marginicollis*	1	2	3'	4'	5''	6c	7	–	9	10a	–	12'	13	14a,a'	–	–	17	111	112	?	?	?	23a	24	25	–
6. *politus*	1	2	3	–	–	6d	7'	–	9	10a	–	12'	13	–,14b,e'	–	–	–	–	–	20	–	–	–	–	–	–
7. *exactor*	1	2	3'	4	5	–	7	–	9	10a	–	12'	–	–	–	–	–	–	–	–	–	–	?	?	?	?
8. *multipunctatus*	1	2	3	–	5''	6d	7'	–	9	10b	–	12'	13	–,14b	–	–	–	–	–	20	–	–	–	–	–	–
9. *obsoletus*	1	2	3'	4	5''	6d	7'	–	9	10b	–	12''	13	–	–	–	–	–	–	20	–	–	?	?	?	?
10. *villosus*	1	2	3	–	5''	6d	7'	–	9	10b	–	12'	13	–	–	16a	–	–	–	–	–	–	?	?	?	?
11. *similis*	1	2	3	–	5''	6d	7'	–	9	10b	11b	12	13	14b	–	–	–	–	–	20	–	–	–	–	–	–
12. *tasmani*	1	2	3	–	5'	6d'	7'	–	9	10b	11a	–	13	14b	–	–	–	–	–	?	?	?	?	?	?	?
13. *nigricauda*	1	2	3'	4	5''	6d	7'	–	9	10b	11a	12'	13	14c	–	–	–	–	–	–	–	–	?	?	?	?
14. *seriepunctatus*	1	2	3	–	5'''	6d'	7'	–	9	10b	11a	12'	13	14b'	15	–	–	–	–	–	–	–	–	24'	25'	–
15. *rubiginosus*	1	2	3'	4	5'''	6d	7'	–	9	10b	11a	12'	13	14a,a'	–	–	–	–	–	20	–	–	23b	24'	25'	26a
16. *laevis*	1	2	3'	4	5'''	6d	7'	–	–	10b	11a	12'	13	14a'	–	–	–	–	–	20	–	–	23b	24'	25'	26a
17. *unicolor*	1	2	3'	–	5'''	6d''	7''	–	9	10b	11a'	12	13	–	–	–	–	–	–	?	?	?	?	?	?	?
18. *linearis*	1	2	3'	–	5'''	6d''	7''	–	9	10b	11a''	12'	13	14b,b''	–	–	–	–	–	–	–	–	?	?	?	?
19. *celeripes*	–	–	–	–	–	6a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	?	?	?
20. *gyrinoides*	–	–,2	–,3	–	5''	6b	7	–	9	–	11a'	12'	13	–,14b,e,e'	–	–	–	–	–	–	–	–	–	–	–	–
21. *punctulifer*	–	2	3	–	5''	6d	7'	–	9	10b	11a	12	13	14b	–	–	–	–	–	–	21	–	?	?	?	?
22. *analis*	–	–	3	–	5''	6b	7	–	9	–	11a'	12	13	14b	–	16b	–	–	–	–	–	–	?	?	?	?
23. *paroensis*	–	2	3	–	5''	6d	7'	–	9	10b	11a	12'	13	14a	–	–	–	–	–	–	–	22	–	–	–	–
24. *fasciatus*	–	2	3	–	5'''	6d'	7'	–	9	10b	11a'	12	13	14e	–	–	–	–	–	–	–	–	–	–	25'	–
25. *nemosomoides*	–	2	3'	–	5'''	6d''	7''	–	9	10b	11a'	12	13	14b	–	–	–	–	–	20	–	–	?	?	?	?
26. *maculipennis*	–	2	3'	–	5'''	6d''	7'	–	9	10b	11a'	12'	13	14e	–	–	–	–	–	–	–	–	–	24'	25'	26b



29. Elytral striae distinctly impressed: plesiomorphic by outgroup comparison; elytral striae reduced: apomorphic.

30. Punctures of elytral striae normal: plesiomorphic by outgroup comparison; punctures horseshoe-shaped: apomorphic.

31. Labial palpus comparatively narrow: plesiomorphic by outgroup comparison; labial palpus very wide, securiform: apomorphic, certainly convergently evolved in several species-groups.

32. Antenna elongate, median segments c. as long as wide or longer: plesiomorphic by outgroup comparison; antenna more or less shortened to very short, with median segments much wider than long: apomorphic. This is a very common trend within most species-groups.

33. Abdomen black: plesiomorphic by outgroup comparison; abdomen red: apomorphic. Also a common trend in several groups, not only in species with red apex of elytra, but also in completely black species.

34. Ventral surface of aedeagus normal: plesiomorphic by outgroup comparison; ventral surface of aedeagus distinctly striate: apomorphic.

35. Apex of aedeagus normal, more or less widely rounded: plesiomorphic by outgroup comparison; apex of aedeagus acute: apomorphic, state occurring independently in several species-groups.

Subject to the mentioned reservations the cladogram (Fig. 277) could be interpreted as follows: A large number of species-groups is presumably united to a monophyletic group that is defined by the synapomorphic states of characters 1 and 2 (*dytiscides-* to *linearis*-groups). Within this assemblage there are two other apparent monophyletic groups combined by the synapomorphic states of characters 6d and 7' (*politus-linearis*-groups) and of several characters (*katherinei-marginicollis*-groups), respectively. Within the first group the *politus*-group is apparently the plesiotypic adelphotaxon of the rest, although in appearence it is very similar to other, more evolved groups. The remaining groups are divided by several sister-group relations, partly of single species-groups that actually consist of single species only

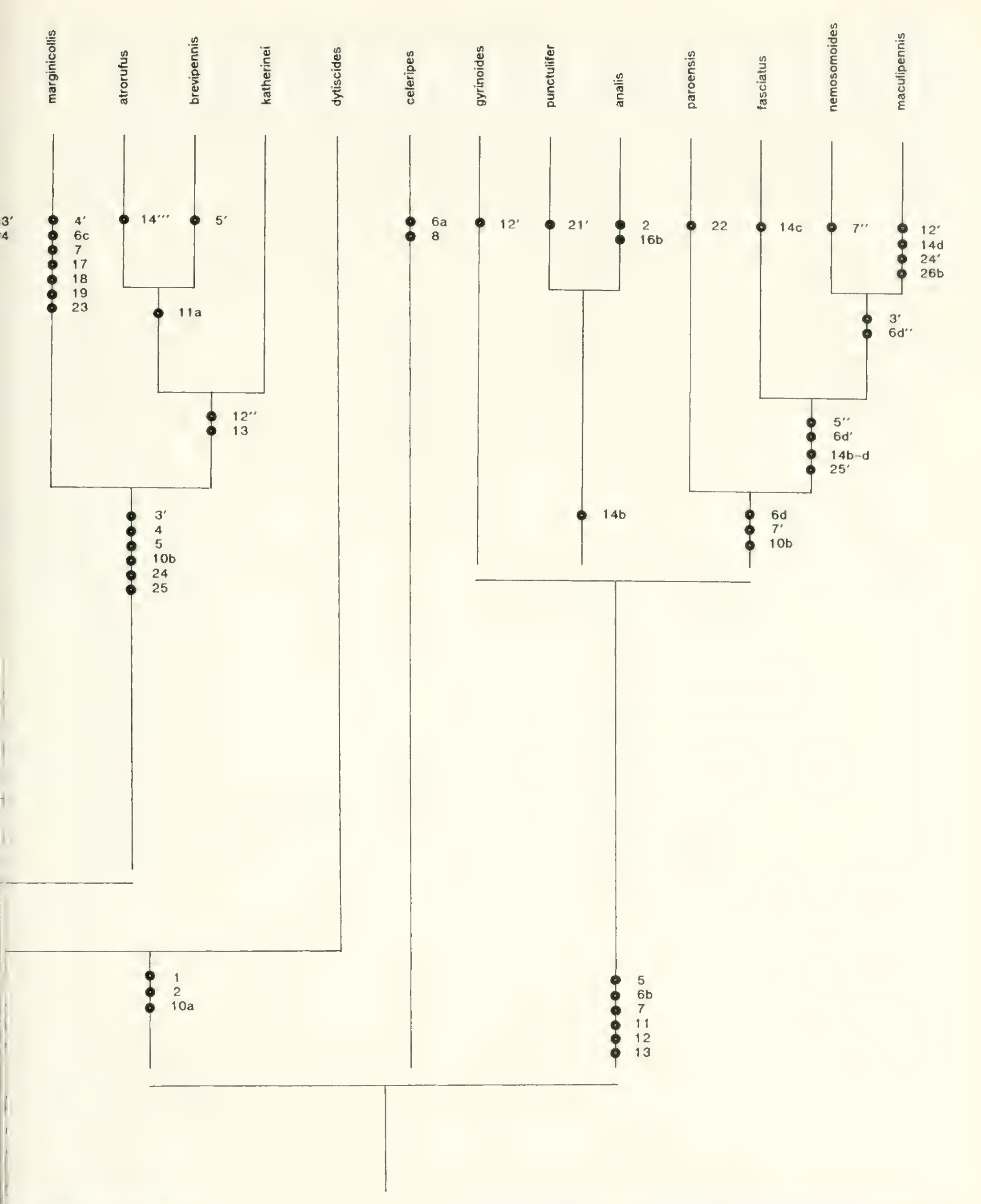


Fig. 277. Cladogram of the supposed relationships of the species-groups of the genus *Adelotopus*, based on tables 8 and 9. Interrupted lines denote tri- or polytomies. For explanation of numbers see tab. 4 and tab. 5.

(e.g. *villosus-*, *similis-*, *tasmani-*, *nigricauda*-groups) with the respective rest of species-groups. All these single-species-groups bear certain autapomorphic character states that make them very characteristic. The *multipunctatus-obsoletus*-lineage on the other hand is externally very similar to the *politus*-group.

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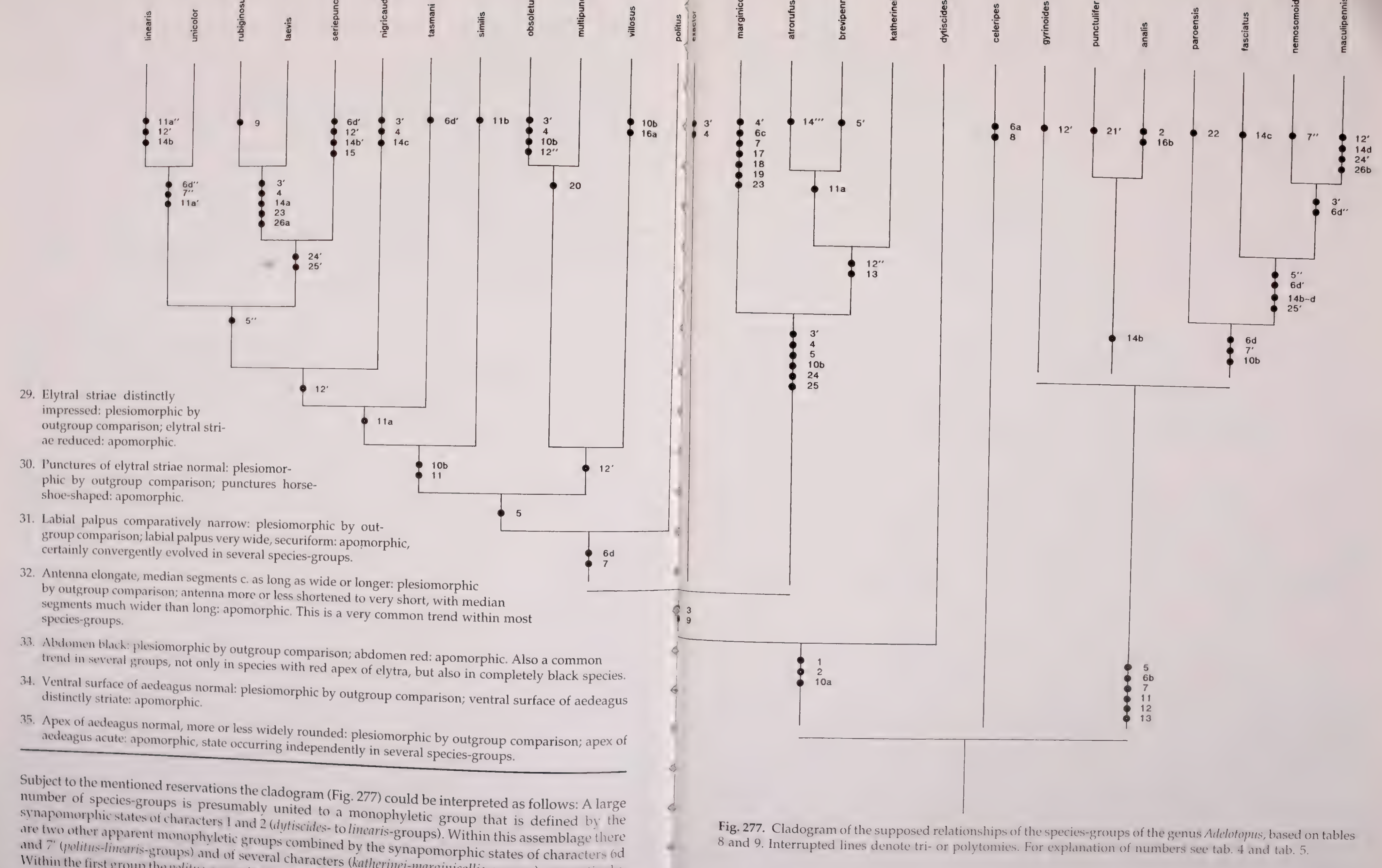


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(e.g. *villosus-*, *similis-*, *tasmani-*, *nigricauda*-groups) with the respective rest of species-groups. All these single-species-groups bear certain autapomorphic character states that make them very characteristic. The *multipunctatus-obsoletus*-lineage on the other hand is externally very similar to the *politus*-group.

The remaining *rubiginosus-* and *laevis-*groups together with their apparent adelphotaxon, the *seriepunctatus-*group, on the one hand, and the *unicolor-* and *linearis-*groups on the other hand are most evolved in many respects.

The *marginicollis-* to *brevipennis-*group lineage is perhaps mainly combined by the larval synapomorphic states 24 and 25. Although most species-groups of this lineage look externally rather similar to basically branching groups, they are highly apomorphic in certain character states. Certainly the *katherinei-* to *brevipennis-*groups are closely related and they form perhaps the adelphotaxon of the outstanding *marginipennis-*group that is characterized by an exceptionally large number of autapomorphic features. In several respects the *dytiscides-*group is presumably very plesiotypic and the most primitive species of this group may be much alike to the hypothetical ancestral lineage of *Adelotopus*. Most critical in this cladogram are the positions of the *exactor-*, *politus-*, and *tasmani-*groups that do not match well. The *exactor-*group is perhaps also a rather basal group, but less so than the *dytiscoides-*group. It could even represent a somewhat aberrant side branch of the *multipunctatus-*group. The *politus-*group seems to be combined with the *villosus-* to *linearis-*lineages by the character states 6d and 7', but has the basal border of the elytra almost complete and could therefore be wrongly arranged in the cladogram. The *tasmani-*group seems to be combined with the *nigricauda-* to *linearis-*lineages by character state 11a, but it lacks the state 12, so its position is also disputable.

Mainly because of the uncertain status of the *exactor-*group the mentioned part of the cladagram presents a trichotomy that cannot be elimited at present.

The rest of the species-groups (*celeripes-* to *maculipennis-*groups) are perhaps not actually related, since I do not know a clear synapomorphic character state for all groups. The *celeripes-*group is plesiomorphic in several structural respects, it bears, on the other hand, also some autapomorphic features and may be thus a very early branching and somewhat isolated offshoot. At present, I am not even able to arrange it in such a way that the trichotomy between the *dytiscides-* to *linearis-*lineage, the *celeripes-*group, and the *gyrinoides-* to *maculipennis-*lineage is eliminated.

The remaining groups (*gyrinoides-* to *maculipennis-*groups) apparently form a monophyletic unit, and within this the *paroensis-* to *maculipennis-*groups may form another monothyletic unit, whereas the *gyrinoides- punctulifer-*, and *analis-*groups combine several plesiomorphic character states, but may be also related. The latter two groups are strikingly apomorphic in single charcters and could be specialized offshoots of the *gyrinoides-*group. However, at present the trichotomy between the *gyrinoides-*group, the *punctulifer-analis-*lineage, and the *paroensis-* to *maculipennis-*lineage cannot be eliminated. The *paroensis-* to *maculipennis-*groups form a monophyletic unit, in which the *paroensis-*group is the adelphotaxon of the rest. Certainly the *fasciatus-* to *maculipennis-*groups form a further well established monothyletic unit with many synapomorphic features, in which the *fasciatus-*group is the adelphotaxon of the *nemosomoides-* and *maculipennis-*groups. Surprisingly both latter groups have independently attained a similar, extremely specialized shape and structure like the *unicolor-* and *linearis-*groups.

8.4.1. Phylogenetic relationships within the species-groups of the genus *Adelotopus* Hope

It is even more difficult to evaluate the phylogenetic status of the species than that of the species-groups, because several species are known from one sex only and, even more severe, because many species are either so closely related that it is almost impossible to fix phylogenetically valuable character states, or due to the large number of parallelisms. Within most species-groups consequently only trends can be assumed. Moreover, it is not always evident in which direction trends or character state displacements have proceeded.

Several character states used for the characterization of species-groups are not useful at the species level, because they are commonly very uniform within species-groups. External characters like shape, striation, puncturation and others, however, are rather variable within species and difficult to use. Hence, the following attempt to arrange the species within their species-groups according to their evolutionary level, makes primarily use of the trends described for the species-groups, to a lesser degree of special characters on the ♂ and ♀ genitalia, of characters of the elytral puncturation and microreticulation, and of colour and pattern. Heterobathmy of character states is usually also marked which leads to the obstacle that we can assume that one species is apomorphic in one or another character state and that the other is not, but usually we cannot give a picture of the real relationships

in terms of synapomorphies expressed in a cladogram. Hence, I refrained from constructing cladograms on the species level, because they would be too much dotted with question-marks. Instead I tried to fix the less specialized species of each species-group and to specify in which character states the other species are apomorphic or, perhaps, synapomorphic.

The difficulties in arranging the species are perhaps caused by the presumably very recent evolution of many of them and, on the other hand, by an apparent high degree of morphological conservatism of the adults. This may be different in the larvae and future better knowledge of the larvae may facilitate a thorough cladistic analysis at the species level.

1. *Dytiscides*-group. This group is plesiotypic in many characters of body shape and male genitalia, and it may reflect rather well the ground-plan of *Adelotopus* in external and genitalic structure. In view of its most unspecialized structure, e. g. in body shape, presence of ambulatory setae on sternum VI, and simple aedeagus, *A. dytiscides* is apparently the least specialized species, followed by the closely related species *A. ulrichi* and *A. latior* that have attained apomorphic states in characters of puncturation of elytra and male genitalia. Due to the convex build, the glossy surface caused by the reduction of microreticulation, and the reddish colour of the tip of the abdomen *A. apicalis* is rather evolved within this group. The other three species are also apomorphic in certain respects, and altogether they are apomorphic in their lesser size and less explanate margin of the pronotum. Perhaps *A. sericeus* is the most highly evolved species in its very sericeous microreticulation, the complete loss of elytral puncturation, and the markedly curved aedeagus.

3. *Brevipennis*-group. This group combines rather different species in shape, colour and state of several other structures. Presumably a moderately elongate body shape, uniformly black colour, presence of microreticulation, absence of pilosity, full set of elytral umbilical pores (i. e. 6 + 0), presence of abdominal ambulatory setae, and rather elongate antenna are the main plesiomorphic states within this group. In all these respects *A. adelaidae* is most plesiomorphic. It is most similar in body shape to the *dytiscides*-group, has strong microsculpture of the surface, uniformly dark colouration, the longest antenna of the whole group, and is unique in the *brevipennis*-group that it has retained the abdominal ambulatory setae.

A further phylogenetic analysis is difficult, because several character state displacements show a heterobathmic distribution throughout the species. However, the following – divergent – trends within the group eventually result in apomorphic states: to either short and wide, or to narrow and elongate body shape; to light, reddish or yellowish colour; to evolution of a pattern; to reduction of microreticulation; to presence of pilosity; to reduction of umbilical pores; to shortening of the antenna.

The black species *A. bamagae* and *A. edithae*, but also the single patterned species *A. rufozonatus* possess a pilose surface and altogether a rasp-like puncturation. They all have very short antennae, but the full set of elytral umbilical pores. *A. longus* has the microreticulation almost reduced, but also in *A. rufomarginatus* the microreticulation is rather weak. *A. elongatus, A. piceus, A. rufescens, A. flavus, A. longus,* and *A. sinuaticollis* are more or less light coloured and all these species except for *A. longus* have a comparatively elongate antenna, in all except for *A. longus* microreticulation is well developed, and all possess the full set of elytral umbilical pores. *A. rufomarginatus* has distinct reddish marginal borders, a reduced set of elytral umbilical pores, rather reduced microreticulation, and it has also a very short antenna. *A. brevipennis* is very short and wide, has the most reduced set of elytral umbilical pores, a very short antenna and a markedly wide, conspicuously triangular aedeagus. The aedeagi of all other species so far known are rather similar and far less asymmetric, only in *A. sinuaticollis* the apex is rather acute. When all present character states of these trends are combined, then the following species are in certain but differing respects more apomorphic than the rest: *A. brevipennis, A. rufomarginatus, A. longus,* and *A. bamagae, A. edithae,* and *A. rufozonatus* – the latter three may be actually related and form a monophyletic unit. The mentioned species may represent the final states of certain morphoclines. Of the rest of species, those that are very light-coloured (e. g. *A. rufescens* and *A. flavus*) may be also more evolved than others.

5. *Marginicollis*-group. The characteristics of this group, e.g. coriaceous surface, transverse impressions on pronotum and elytra, wide, chanelled pronotal margins, are by far less well marked in *A. marginicollis* than in both, *A. coriaceous* and *A. seminitidus*. The light colour of *A. marginicollis*, on the other hand, is perhaps apomorphic. According to the unusual structure of the elytral surface, *A. seminitidus* is perhaps even more evolved than *A. coriaceous*. Unfortunately the male genitalia are

thus far unknown of all three species. They may be useful for further elucidation of the relationships of the species.

6. *Politus*-group. The relationships of the many species combined in this group are particularly obscure, because all species are very uniform in external and genitalic structure. Apart from differences in colour and pattern, main differences are in size, relative shape, degree of puncturation and microreticulation, and other minor characters. Certainly the uniformly black colour is plesiomorphic, the reddish apex of elytra and abdomen, and further the red discal spot are apomorphic character states that are perhaps synapomorphic in the species where they occur. Although absence of microreticulation is also an apomorphic state, I think it is impossible to know, how many times this reduction occurred. Nevertheless, it must have happened at least three times in this group, because it is present in uniformly black species, in species with red apex, and in species with discal elytral pattern.

When all character states and trends are combined, those species of the *politus*-lineage (*A. politus*-*A. caniae*) are perhaps least evolved, with *A. caniae* and *A. substriatus* being perhaps apomorphic in most respects. Provided the red apex of the elytra is a synapomorphic state, the species of the *ruficaudatus*-lineage may be actually related, with *A. kurandae* perhaps being most evolved. And the species of the *bimaculatus*-lineage may constitute the most evolved monophyletic unit, with *A. clepsydra* perhaps being the most highly evolved species of the whole *politus*-group.

8. *Multipunctatus*-group. In this group, too, the relationships are very difficult to trace because of extreme similarity of the included species. Three species only (*A. multipunctatus*, *A. ovatus*, and *A. browni*) are uniformly black and represent herein the plesiomorphic state. However, they have the microreticulation completely reduced and are also either densely punctate, or markedly wide, which are both apomorphic states. In all other species the apex of the elytra is red, but there are minor differences in width and shape of the reddish part. The rather wide, irregularly margined apical part in *A. laticaudatus* and *A. gibbosus* is perhaps apomorphic, as well as the comparatively convex body shape in *A. gibbosus* and the absence of the postmedian marginal pore in *A. debitor*. Apparently *A. geminus* and *A. laticaudatus* and again *A. nitidior* and *A. debitor* form a pair of closely related and vicariant species each. Otherwise, most species are distinguished by minor characters the phylogenetic signifance of which is uncertain or difficult to track.

14. *Seriepunctatus*-group. This is a highly apotypic group according to the character states of several trends. Within the group *A. puncticollis* has a rather aberrant and perhaps apomorphic aedeagus and an apomorphic pattern. Otherwise, it does not differ much from the other species. Unfortunately males are so far unknown in 2 of the 4 remaining species, hence the relations of these are uncertain, because externally all species differ only slightly.

15. *Rubiginosus*-group. This groupis in many respects apotypic, in particular with regard to the generally light colour, very abbreviated basal border of elytra, and generally convex body with narrow lateral margins of pronotum and elytra. The many species, however, are so similar and the variability is so considerable, that explanation of phylogenetic relationships is very difficult and only trends can be noted. Certainly a highly convex body shape with narrow lateral margins of the pronotum as shown in *A. rubiginosus* is apomorphic within the group. Reduction of microreticulation on pronotum and especially on head is also apomorphic. In the aedeagus asymmetric shape, acute apex, and marked striation are further apomorphic states.

The species without any microreticulation on the head (vic. *A. rubiginosus*, *A. distinguendus*, *A. foliaceus*, *A. queenslandicus*, *A. palumae*, *A. angustatus*, *A. flavescens*, *A. grossepunctatus*, *A. ooldeae*, and *A. crucis*) may form a monophyletic unit, the more as they generally posses rather or very convex body shape and usually rather narrow pronotal lateral margins. None of this species has a distinctly striate aedeagus, but in *A. palumae* and also *A. queenslandicus* there are some rather weak lateral striae. Both latter species and also *A. foliaceus* are characterized by a rather or highly asymmetric aedeagus with acute apex. Unfortunately, in *A. angustatus* and *A. ooldeae* of this subgroup the male genitalia are still unknown. The aedeagi of *A. foliaceus* and *A. queenslandicus* are outstanding either in their very wide, markedly asymmetric form (*A. foliaceus*) or their irregular shape (*A. queenslandicus*).

Of the rest of species m genitalia are still unknown of *A. houstoni*, *A. crassus*, and *A. latipalpis*. The aedeagus ist strongly striate in *A. virgatus*, *A. brittoni*, *A. adustus*, and *A punctatissimus*, and in all four

species it is also rather asymmetric and the apex is acute. Hence, the four species may form a monophyletic unit. *A. aequus* has also a rather asymmetric aedeagus with acute apex, though it is not striate. All these species are fairly wide and possess rather wide pronota with moderately wide lateral margins. In *A. laticollis, A. cribricollis,* and *A. luteus* the apex is rounded off und the aedeagus is not or only moderately asymmetric. *A. luteus* and *A. houstoni* are outstanding in their wide body shape, und their very wide pronotal lateral margins. These may represent very plesiomorphic states (for the *rubigionsus*-group), or they are apomorphic regressions which I think more probably.

When the mentioned trends and certain autapomorphic features of single species are combined, the following picture of the phylogenetic states may result. *A. laticollis* is perhaps the most plesiotypic species, followed by *A. aequus* and *A. cribricollis. A. luteus* and *A. houstoni* may represent a basally branching lineage that acheived a somewhat specialized body shape. *A. virgatus, A. brittoni, A. adustus,* and *A. punctatissimus* are a monophyletic unit, with *A. virgatus* or *A. adustus* plesiomorphic in most respects. The position of *A. crassus* and *A. latipalpis* within this assemblage is unknown, though both are perhaps rather apomorphic with regard to their very large palpi.

Of the second subgroup perhaps *A. distinguendus, A. rubiginosus,* and *A. crucis* are in most features plesiomorphic, whereas *A. foliaceus* and, on the other hand, *A. flavescens* and *A. grossepunctatus* are apomorphic in certain respects. *A. palumae* and *A. queenslandicus* show also some apomorphic features, though their position is uncertain. Due to the lack of males the position of *A. angustatus* and *A. ooldeae* is at present unknown.

16. *Laevis*-group. This group is closely related to the foregoing *rubiginosus*-group. With regard to the odd-shaped aedeagus *A. laevis* is apomorphic, whereas *A. ciliatus* and *A. brevior* are less evolved and may be eastern and western vicariants.

18. *Linearis*-group. The two species of this group are externally rather different, but share certain constituting characters and have also very similar male genitalia. *A. linearis,* however, is apomorphic in its outstanding elytral pattern.

20. *Gyrinoides*-group. This group is in many character states plesiomorphic, though it shows a rather distinct evolution with respect to loss of certain primitive character states of chetotaxy, evolution of different patterns some of which are rather complicated, and strengthening of puncturation. The male genitalia, although being rather complicated and well suitable for species distinction, are basically very similar and do not show distinctive trends.

Due to the presence of the scutellar pore *A. vicinus* and *A. dubius* are perhaps the most plesiomorphic members of this group. More evolved are the equally black species *A. montorum, A. victoriensis, A. parumpunctatus,* and *A. gippslandicus,* a piceous species with distinct reddish translucent borders (*A. murrayanus*), two species with reddish elytral apex (*A. lawrencei, A. lunatus*), and finally a species with a transverse elytral band and reddish apex (*A. zonatus*). The latter three species and *A. parumpunctatus* are further characterized by the very glossy surface due to absence of microreticulation and marked reduction of puncturation.

On the other hand there is a group of evolved species that has markedly coarse and dense puncturation. The unpatterned *A. punctatus* has extremely dense and coarse puncturation, whereas the following species have evolved different patterns, but are less strikingly punctate. Of these *A. rufoguttatus* is most similiar to *A. punctatus,* apart from possessing discal spots that may combine to a transverse stripe. *A. affinis* and *A. basirufus* possess a well developed transverse basal elytral stripe but less distinct puncturation, and *A. macilentus* has two discal spots, but is outstanding by its narrow, elongate shape. All these species may either form a monophyletic unit, or may be independent offsprings from a plesiomorphic member similar to *A. vicinus.*

25. *Nemosomoides*-group. Highly evolved group. In its odd-shaped apex of the aedeagus *A. longiformis* is apomorphic compared with *A. nemosomoides,* whereas the male of *A. conicollis* is so far unknown. The stylomeres of *A. nemosomoides* and *A. conicollis* are very similar and presumably apomorphic compared with the stylomere of *A. longiformis.* Hence *A. longiformis* is perhaps the adelphotaxon of *A. nemosomoides* and *A. conicollis.*

26. *Maculipennis*-group. Highly evolved group. With regard to the more elongate body shape *A. maculipennis* is apomorphic, but elytral pattern is apomorphic in *A. cuneatus.*

8.5. Phylogenetic relationships within the genus *Cainogenion* Notman

With regard to the remarkably morphological uniformity that is caused by the high grade of specialization of the species, the phylogenetic relationships within the genus *Cainogenion* are not easily discovered. The high specialization was presumably a further adaptation to the myrmecophilous habits, but as a consequence, most species now differ in minor characters only. Apparently there are few clearly visible trends within the genus, i.e. mainly towards reduction of the pilosity of the lateral margins and the surface, reduction of the puncturation, and towards lighter colouration and development of a colour pattern on the elytra. Hence parallelisms are common and decisions about synapomorphy or homoplasy are difficult.

Some clusters of character states that are generally connected and some apparently evolutive trends of and within the genus *Cainogenion* are discussed below briefly.

Body shape and structure of suborbital region. The general body shape of the genus is rather wide though parallel, and dorsally distinctly depressed. This shape is to some degree shared with the related genus *Paussotropus*. The wide, explanate lateral margins of the pronotum are conspicuous, although they have been reduced to some extent in certain species. Compared with the trend to markedly convex, smooth shape with narrow pronotal margins seen within *Adelotopus* and *Cryptocephalomorpha*, but also in the less evolved genera *Sphallomorpha* and *Pseudomorpha*, the rather wide body shape in *Cainogenion* seems to be less well adapted to the myrmecophilous habits that the species of this genus certainly possess to a higher degree than most others. Moreover *Cainogenion* species are apparently rather sluggish and perhaps unable to escape from attacks by ants by smoothness and/or speed.

All species of *Cainogenion* as well as *Paussotropus cylindricus* have the suborbital area conspicuously transformed into a variously, often very complexly shaped hollow below eyes, the ventral margin of which is widened to a suborbital lamina. This lamina is variously excised and bears a tooth-like process. It is also invariably studded with a tuft of hairs. In both genera the maxillary plate is also remarkably enlarged and, in *Paussotropus*, it bears a dense tuft of glandular hairs glued together. Although in *Cainogenion* these hairs apparently are lacking, I think that the maxillary plate is likewise used as a secretory organ. To summarize, I believe that the subocular area in both genera is glandular and may exude a secrete that is used in one or another way to appease their host ants. Certainly, these organs should be examined in detail, but at present I do not see another explanation of their development and function.

If this opinion is right, it would explain the defiencies mentioned above, because *Cainogenion* and *Paussotropus* do not need to rely on an armoured body structure or on swift locomotion to cope with ants, but have developed another method that is widely used by different myrmecophilous insects groups (e. g. Paussinae).

Pilosity and puncturation of the surface. According to outgroup comparison with the related genus *Paussotropus* the plesimorphic state in *Cainogenion* is apparently that of well developed, rather dense pilosity of the whole surface and a dense lateral fringe of longer hairs on pronotum and elytra. This fringe is primarily double, because the very margin bears as well hairs as the pronotal and elytral epipleura. A similar fringe has been likewise evolved within the genus *Pseudomorpha*, and sporadically within *Adelotopus*. In both genera some evolved species or species-groups also bear a conspicuous, erect pilosity. Nevertheless not these apomorphic character states in the mentioned genera can be synapomorphic, but at most the predisposition (in the sense of an "underlying synapomorphy" sensu Saether 1990) that may have been genetically fixed in the original stock from which the ancestors of *Pseudomorpha* and of the *Adelotopus-Cainogenion-Paussotropus*-lineage were derived.

Within *Cainogenion* the dorsal pilosity as well as the lateral fringe have been reduced in some species and this reduction is correlated in some taxa with the reduction of the dorsal puncturation. At the same time the dorsal puncturation, in particular that of the elytra, shows the trend to become very coarse. The functional and evolutionary significance of both trends is rather doubtful, though the very coarse, and on the pronotum usually rugose, puncturation may be a means to mask the specimens because the deep and large punctures are commonly filled with dirt.

It should be noted, however, that under the assumption mentioned above the surface pilosity must have been reduced several times within the subgenus *Cainogenion* s. str. which is certainly a point of

issue of this hypothesis, but the idea of independent development of the pilosity in *Procainogenion* and within *Cainogenion* s. str. would raise even more questions.

Chetotaxy. The chetotaxy is generally much reduced in *Cainogenion*. Within *Cainogenion*, however, the chetotaxy of labrum, clypeus, and glossa tends to become polysetose. The evolutionary significance of this increase is not known.

Colour and pattern. As in the other genera the basic colour in *Cainogenion* is perhaps uniformly dark piceous or blackish. Transformation of this condition is rather limited within *Cainogenion* as compared with the genera *Sphallomorpha* and *Adelotopus* and even *Cryptocephalomorpha*. Few species are more or less ligh reddish and some others have evolved a large, rather inconspicuous sutural spot on the elytra. The light colour is connected with a remarkable reduction of puncturation and with the loss of the dorsal and lateral pilosity. Both transformations are certainly apomorphic without our knowing their evolutionary significance.

Mouth parts. *Cainogenion* has retained the almost orthognathous direction of the head, like in *Adelotopus* and *Paussotropus*. Within the genus the mouth parts are rather similar and the most obvious differences are in shape, chetotaxy, and degree of overlap of the labrum, and in shape of the palpi, in particular the labial palpi. Decrease of size of mouth parts and covering of the labrum are certainly apomorphic states that are even more significantly developed in the genus *Cryptocephalomorpha*.

Legs. In *Cainogenion*, shape and structure of legs show a rather high grade of specialization when compared with the legs of *Sphallomorpha*, *Pseudomorpha* and even *Adelotopus*, but without achieving the very apomorphic structure in *Paussotropus* and again in *Cryptocephalomorpha*. Within the genus, however, there is little variation.

Certainly, the leg structure of *Paussotropus* with rather elongate though markedly widened tibiae and very short and compact tarsi can be derived from the structure in *Cainogenion* with already somewhat depressed tibiae and fairly shortened tarsi that is intermediate between *Adelotopus* and *Paussotropus*. Hence there is a general trend towards highly depressed, foliaceous femora and tibiae, but short and very compact tarsi that eventually leads to a highly protective shape of the legs. I think that this is an adapatation to the myrmecophilous habits that developed at the expense of running ability. For the reasons mentioned above, however, velocity was perhaps no longer needed.

Male genitalia. The male genitalia within the genus *Cainogenion* are basically very uniform and do not show many specializations. Generally, they are moderately complex and apomorphic as compared with the most plesiomorphic type in *Adelotopus*, but the internal sac does not show the complicate structure seen in some more evolved species-groups of *Adelotopus*. Characteristically, the parameres are rather similar in shape, but not in size. Unfortunately, male genitalia are not yet known in some apparently rather primitive, and evolved species, respectively. Therefore male genitalia are of little use in reconstruction of the phylogenetic relationships.

Female genitalia. The stylomeres show exactly the same highly apomorphic foliaceous structure as in *Adelotopus*, and within *Cainogenion*, they are rather similar throughout, except for one species that is also plesiomorphic in some other respects. In that species the stylomeres still have a very fine suture at the base of the former stylomere 2 that demonstrates where the stylomeres have been united.

Secondary sexual characters. In *Cainogenion* the secondary sexual characters are completely reduced and even the male protarsus is no longer clothed beneath. This is certainly a further development of a trend already seen in *Adelotopus* and it may recall some unknown changes in mating behaviour.

Summary of the character evolution. In *Cainogenion* a rather high level of specialization has been achieved that is little developed within the genus. Such evolutionary pattern is certainly correlated with very slight ecological differentiation of the genus. The main evolutive trend seems to be an increasing adaptation to myrmecophilous habits and the most important transformation was certainly the development of the subocular area and of the maxillary plates in the ancestral stock of *Cainogenion* (and *Paussotropus*) that must have had a marked functional shift.

In the following list the phylogenetic status of the used character states is mainly derived from outgroup comparisons with the other pseudomorphine genera, especially the related genus *Paussotropus*.

Tab. 11. Character states of the species of *Cainogenion*, numbered as in tab. 10. –: plesiomorphic state; number: apomorphic state; ?: state unknown. Other abbreviations as in tab. 4.

species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1
ephippiatum	–	2a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
rotundicolle	–	–	–	4b	–	–	–	–	9a	10	11	12	13	14	15	–	–	
clypeale	–	–	–	4b	5	6	7'	–	9a	10	11	12'	13	14	15	16b	17b	-
tropicum	–	2b	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
glabratum	1	–	3	4b	5'	6'	7'		9b	10'	11	12'	13	14	15'	–	–	1
depressum	1	–	–	4b	5'	6'	7'		9b	10'	11	12'	13	14	15'	–	–	1
i. ipsoides	–	–	–	4b	–	6	7	–	9a	10'	11	12'	13	14	15'	–	–	1
i. occidentale	–	–	–	4b	–	6	7	–	9a	10'	11	12'	13	14	15'	16a	–	1
c. creberrimum	–	–	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
c. gnaltae	–	–	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
parumpilosum	–	2c	–	4a	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
obscurum	–	2c	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
interiore	–	–	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	1
subopacum	–	2c	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	17a	1

Tab. 10. Character states used for the construction of phylogenetic relationships of the species of the genus *Cainogenion*. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophe (').

1. Colour piceous or black: plesiomorphic by outgroup comparison; colour reddish (1): apomorphic.
2. Elytra without pattern: plesiomorphic by outgroup comparison; elytra with more or less distinct sutural spot (2a, b, c): apomorphic, different states. Pattern must have been evolved at least three times within the genus.
3. Body shape wide and dorsally depressed: plesiomorphic by outgroup comparison, further supported by the principle of "common occurrence"; body shape narrower, elongate, and more convex (3): apomorphic.
4. Surface densely pilose: plesiomorphic by outgroup comparison; surface sparsely pilose (4a) or impilose (4b): apomorphic, probably two independently evolved states, though the full reduction perhaps evolved also repeatedly.
5. Puncturation on head complete: plesiomorphic by outgroup comparison; puncturation on head partly reduced (5) or completely reduced (5'): apomorphic, states of a morphocline.
6. Puncturation on pronotum complete: plesiomorphic by outgroup comparison; puncturation on pronotum partly reduced (6) or more widely reduced (6'): apomorphic, of a morphocline, though that may have evolved several times within the genus.
7. Puncturation on elytra complete: plesiomorphic by outgroup comparison; puncturation of elytra reduced on shoulders only (7) or markedly reduced on base, lateral margin, and apex (7'): apomorphic, states of a morphocline, though that may have evolved several times within the genus.
8. Puncturation on head not rugose: plesiomorphic by outgroup comparison; puncturation on head rugose (8): apomorphic.
9. Puncturation on pronotum not rugose: plesiomorphic by outgroup comparison; puncturation on pronotum rugose (9a) or secondarily not rugose (9b): apomorphic, the latter state probably a secondary reduction due to general reduction of puncturation.
10. Puncturation on elytra fine: plesiomorphic by outgroup comparison; puncturation on elytra moderately coarse (10) or very coarse (10'): apomorphic, states of a morphocline.
11. Mandibles laterally evenly rounded: plesiomorphic by outgroup comparison; mandibles angulate, though obtusely rounded (11): apomorphic.
12. Labrum elongate, as long as wide: plesiomorphic by outgroup comparison; labrum shortened, though rather narrow (12) or short and wide (12'): apomorphic, states of a morphocline.

20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
–	21	22	–	–	–	–	–	–	–	–	–	–	–	34	–	–	37	–	39
?	–	–	23'	24	–	–	–	–	–	30	–	?	?	?	–	–	–	38	–
20	–	–	23	24	–	–	27	28	–	30	–	–	33	–	?	?	?	?	?
20'	–	–	23	24	25	–	27	28	29	30'	–	–	33	–	–	–	–	38	39
20'	–	–	–	–	–	26	27	28	29	30'	31	?	?	?	–	–	–	38	39
20'	–	–	–	–	–	26	27	28	29	30'	31	?	?	?	–	–	–	38	39
20'	–	–	–	–	–	–	27	28'	–	30'	–	32	33	–	35	–	–	38	39
20'	–	–	–	–	–	–	27	28'	–	30'	–	32'	33	–	–	–	–	38	39
20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
20'	–	–	23	24	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
20'	–	–	23	24	–	–	27	28	–	30'	–	–	33	–	–	–	–	38	39
20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	36	–	38	39
20'	–	–	23	–	–	–	27	28	–	30'	–	–	33	–	–	–	–	38	39

13. Labrum not overlapped by clypeus and without deep cleft: plesiomorphic by outgroup comparison; labrum partly overlapped, with deep cleft (13): apomorphic.

14. Labrum anteriorly rounded: plesiomorphic by outgroup comparison; labrum anteriorly excised (14): apomorphic.

15. Labrum 4-setose: plesiomorphic by outgroup comparison; labrum 6-setose (15) or polysetose (15'): apomorphic, states of a morphocline.

16. Clypeus straight or convex or but slightly concave at anterior border: plesiomorphic by outgroup comparison; clypeus at anterior border moderately concave (16a) or deeply concave (16b): apomorphic, perhaps independently evolved states.

17. Clypeus depressed, but not impressed on surface: plesiomorphic by outgroup comparison; clypeus somewhat impressed (17a) or deeply impressed (17b): apomorphic, independently evolved states.

18. Clypeus 2-setose: plesiomorphic by outgroup comparison; clypeus polysetose (18a) or asetose (18b): apomorphic, independently evolved states.

19. Maxillary plate wide in posterior part: plesiomorphic by outgroup comparison; maxillary plate depressed, border sharp (19): apomorphic.

20. Glossa 2-setose: plesiomorphic by outgroup comparison; glossa 4-setose with some additional setae on paraglossae (20) or polysetose (20'): apomorphic, states of a morphocline.

21. Lateral border of head without distinct projection: plesiomorphic by outgroup comparison; lateral border of head with projection (21): apomorphic.

22. Subocular lamina anteriorly not produced: plesiomorphic by outgroup comparison; subocular lamina produced (22): apomorphic.

23. Lateral margin of head obtuse or irregular, not bordered: plesiomorphic by outgroup comparison; lateral margin of head sharp, though not markedly bordered (23) or sharp, markedly bordered (23'): apomorphic, states of a morphocline.

24. Lateral margin of head with fringe of hairs: plesiomorphic by outgroup comparison; lateral margin of head without fringe (24): apomorphic.

25. Lateral margin of head without oblique stripes: plesiomorphic by outgroup comparison; lateral margin of head with stripes (25): apomorphic.

26. Surface of head without wrinkles: plesiomorphic by outgroup comparison; surface of head with wrinkles (26): apomorphic.

Tab. 11. Character states of the species of *Cainogenion*, numbered as in tab. 10. –: plesiomorphic state; number: apomorphic state; ?: state unknown. Other abbreviations as in tab. 4.

species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
ephippiatum	–	2a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	18a	–	–	21	22	–	–	–	–	–	–	–	–	–	–	–	34	–	–	37	–	39
rotundicolle	–	–	–	4b	–	–	–	–	9a	10	11	12	13	14	15	–	–	–	–	?	–	–	23'	24	–	–	–	–	–	30	–	?	?	?	–	–	–	38	–
clypeale	–	–	–	4b	5	6	7'	–	9a	10	11	12'	13	14	15	16b	17b	–	19	20	–	–	23	24	–	–	27	28	–	30	–	–	33	–	?	?	?	?	?
tropicum	–	2b	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18b	19	20'	–	–	23	24	25	–	27	28	29	30'	–	–	33	–	–	–	–	38	39
glabratum	1	–	3	4b	5'	6'	7'		9b	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	–	–	–	26	27	28	29	30'	31	?	?	?	–	–	–	38	39
depressum	1	–	–	4b	5'	6'	7'		9b	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	–	–	–	26	27	28	29	30'	31	?	?	?	–	–	–	38	39
i. ipsoides	–	–	–	4b	–	6	7	–	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	–	–	–	–	27	28'	–	30'	–	32	33	–	35	–	–	38	39
i. occidentale	–	–	–	4b	–	6	7	–	9a	10'	11	12'	13	14	15'	16a	–	18a	19	20'	–	–	–	–	–	–	27	28'	–	30'	–	32'	33	–	–	–	–	38	39
c. creberrimum	–	–	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
c. gnaltae	–	–	–	4b	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	23	24	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
parumpilosum	–	2c	–	4a	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	23	24	–	–	27	28	–	30'	–	–	33	–	–	–	–	38	39
obscurum	–	2c	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	–	–	38	39
interiore	–	–	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	–	18a	19	20'	–	–	23	–	–	–	27	28'	–	30'	–	–	33	–	–	36	–	38	39
subopacum	–	2c	–	–	–	–	–	8	9a	10'	11	12'	13	14	15'	–	17a	18a	19	20'	–	–	23	–	–	–	27	28	–	30'	–	–	33	–	–	–	–	38	39

Tab. 10. Character states used for the construction of phylogenetic relationships of the species of the genus *Cainogenion*. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophe (').

1. Colour piceous or black: plesiomorphic by outgroup comparison; colour reddish (1): apomorphic.
2. Elytra without pattern: plesiomorphic by outgroup comparison; elytra with more or less distinct sutural spot (2a, b, c): apomorphic, different states. Pattern must have been evolved at least three times within the genus.
3. Body shape wide and dorsally depressed: plesiomorphic by outgroup comparison, further supported by the principle of "common occurrence"; body shape narrower, elongate, and more convex (3): apomorphic.
4. Surface densely pilose: plesiomorphic by outgroup comparison; surface sparsely pilose (4a) or impilose (4b): apomorphic, probably two independently evolved states, though the full reduction perhaps evolved also repeatedly.
5. Puncturation on head complete: plesiomorphic by outgroup comparison; puncturation on head partly reduced (5) or completely reduced (5'): apomorphic, states of a morphocline.
6. Puncturation on pronotum complete: plesiomorphic by outgroup comparison; puncturation on pronotum partly reduced (6) or more widely reduced (6'): apomorphic, of a morphocline, though that may have evolved several times within the genus.
7. Puncturation on elytra complete: plesiomorphic by outgroup comparison; puncturation of elytra reduced on shoulders only (7) or markedly reduced on base, lateral margin, and apex (7'): apomorphic, states of a morphocline, though that may have evolved several times within the genus.
8. Puncturation on head not rugose: plesiomorphic by outgroup comparison; puncturation on head rugose (8): apomorphic.
9. Puncturation on pronotum not rugose: plesiomorphic by outgroup comparison; puncturation on pronotum rugose (9a) or secondarily not rugose (9b): apomorphic, the latter state probably a secondary reduction due to general reduction of puncturation.
10. Puncturation on elytra fine: plesiomorphic by outgroup comparison; puncturation on elytra moderately coarse (10) or very coarse (10'): apomorphic, states of a morphocline.
11. Mandibles laterally evenly rounded: plesiomorphic by outgroup comparison; mandibles angulate, though obtusely rounded (11): apomorphic.
12. Labrum elongate, as long as wide: plesiomorphic by outgroup comparison; labrum shortened, though rather narrow (12) or short and wide (12'): apomorphic, states of a morphocline.
13. Labrum not overlapped by clypeus and without deep cleft: plesiomorphic by outgroup comparison; labrum partly overlapped, with deep cleft (13): apomorphic.
14. Labrum anteriorly rounded: plesiomorphic by outgroup comparison; labrum anteriorly excised (14): apomorphic.
15. Labrum 4-setose: plesiomorphic by outgroup comparison; labrum 6-setose (15) or polysetose (15'): apomorphic, states of a morphocline.
16. Clypeus straight or convex or but slightly concave at anterior border: plesiomorphic by outgroup comparison; clypeus at anterior border moderately concave (16a) or deeply concave (16b): apomorphic, perhaps independently evolved states.
17. Clypeus depressed, but not impressed on surface: plesiomorphic by outgroup comparison; clypeus somewhat impressed (17a) or deeply impressed (17b): apomorphic, independently evolved states.
18. Clypeus 2-setose: plesiomorphic by outgroup comparison; clypeus polysetose (18a) or asetose (18b): apomorphic, independently evolved states.
19. Maxillary plate wide in posterior part: plesiomorphic by outgroup comparison; maxillary plate depressed, border sharp (19): apomorphic.
20. Glossa 2-setose: plesiomorphic by outgroup comparison; glossa 4-setose with some additional setae on paraglossae (20) or polysetose (20'): apomorphic, states of a morphocline.
21. Lateral border of head without distinct projection: plesiomorphic by outgroup comparison; lateral border of head with projection (21): apomorphic.
22. Subocular lamina anteriorly not produced: plesiomorphic by outgroup comparison; subocular lamina produced (22): apomorphic.
23. Lateral margin of head obtuse or irregular, not bordered: plesiomorphic by outgroup comparison; lateral margin of head sharp, though not markedly bordered (23) or sharp, markedly bordered (23'): apomorphic, states of a morphocline.
24. Lateral margin of head with fringe of hairs: plesiomorphic by outgroup comparison; lateral margin of head without fringe (24): apomorphic.
25. Lateral margin of head without oblique stripes: plesiomorphic by outgroup comparison; lateral margin of head with stripes (25): apomorphic.
26. Surface of head without wrinkles: plesiomorphic by outgroup comparison; surface of head with wrinkles (26): apomorphic.

27. Basal angles of pronotum rounded off: plesiomorphic by outgroup comparison; basal angles of pronotum obtuse or angulate (27): apomorphic.

28. Basal angles of pronotum not produced backwards: plesiomorphic by outgroup comparison; basal angles of pronotum slightly produced backwards (28) or markedly produced backwards (28'): apomorphic, states of a morphocline.

29. Lateral margins of pronotum pilose: plesiomorphic by outgroup comparison; lateral margins of pronotum impilose (29): apomorphic.

30. Prosternum not compressed in middle: plesiomorphic by outgroup comparison; prosternum moderately compressed (30) or markedly compressed (30'): apomorphic, states of a morphocline.

31. Lateral margins of elytra pilose: plesiomorphic by outgroup comparison; Lateral margins of elytra impilose (31): apomorphic.

32. Aedeagus rather short: plesiomorphic by outgroup comparison; aedeagus elongate (32): apomorphic.

33. Aedeagus asymmetric: plesiomorphic by outgroup comparison; aedeagus symmetric (33): apomorphic.

34. Aedeagus lateroventrally not striped: plesiomorphic by outgroup comparison; aedeagus striped (34): apomorphic.

35. Apex of left paramere regularly rounded: plesiomorphic by outgroup comparison; apex of left paramere obliquely transverse (35): apomorphic.

36. Upper margin of right paramere straight: plesiomorphic by outgroup comparison; upper margin of right paramere distinctly sinuate (36): apomorphic.

37. ♀ sternum VIII laterally angulate: plesiomorphic by outgroup comparison; ♀ sternum VIII laterally rounded off (37): apomorphic.

38. ♀ sternum VIII apically setose: plesiomorphic by outgroup comparison; ♀ sternum VIII apically asetose (38): apomorphic.

39. Stylomeres with faint suture, apex short: plesiomorphic by outgroup comparison; stylomeres without suture, entire, apex elongate (39): apomorphic.

Under the reservation that the direction of character transformation is not settled for all character states, the cladogram (Fig. 278) clearly demonstrates the validity of the subgenera of *Cainogenion* that are both characterized by many synapomorphies. Within *Cainogenion* s. str. *C. rotundicolle* is apparently the adelphotaxon of all other species, and another, species with many autapomorphies (*C. clypeale*) again is the adelphotaxon of the rest of the species. From this point onwards the interpretation of the character sets is becoming more difficult, because the remaining species are very similar and apparent apomorphic character states are more and more scattered in a heterobathmic distribution. Moreover, the direction of some character transformations is rather doubtful.

Nevertheless, the *tropicum-depressum-* and the *ipsoides-creberrimum*-lineages together may form the adelphotaxon of the *parumpilosum-subopacum*-lineage, but this is based on a weak synapomorphy (4b). The *tropicum-depressum*-lineage itself is presumably the adelphotaxon of the *ipsoides-creberrimum*-lineage, if the latter actually forms a monophyletic unit, but this is likewise based on a rather weak synapomorphy. Certainly, *C. tropicum* and, even more, *C. glabratum* and *C. depressum* are highly evolved species that bear a rather large number of autapomorphies. Unfortunately, at present there is no synapomomorphy for uniting of *C. ipsoides* and *C. creberrimum*, although both species look very similar in many external and genitalic features.

In the remaining *parumpilosum-obscurum-interiore-subopacum*-lineage at the present state of knowledge there is a trichotomy between *C. parumpilosum*, *C. subopacum*, and *C. obscurum* + *C. interiore* that form a monophxletic unit. Although it seems as if *C. parumpilosum* is the adelphotaxon of the remaining species, because theylook very similar, this is not proved.

At any rate, this arrangement means that the surface pilosity has been several times reduced within the subgenus *Cainigenion* s. str.

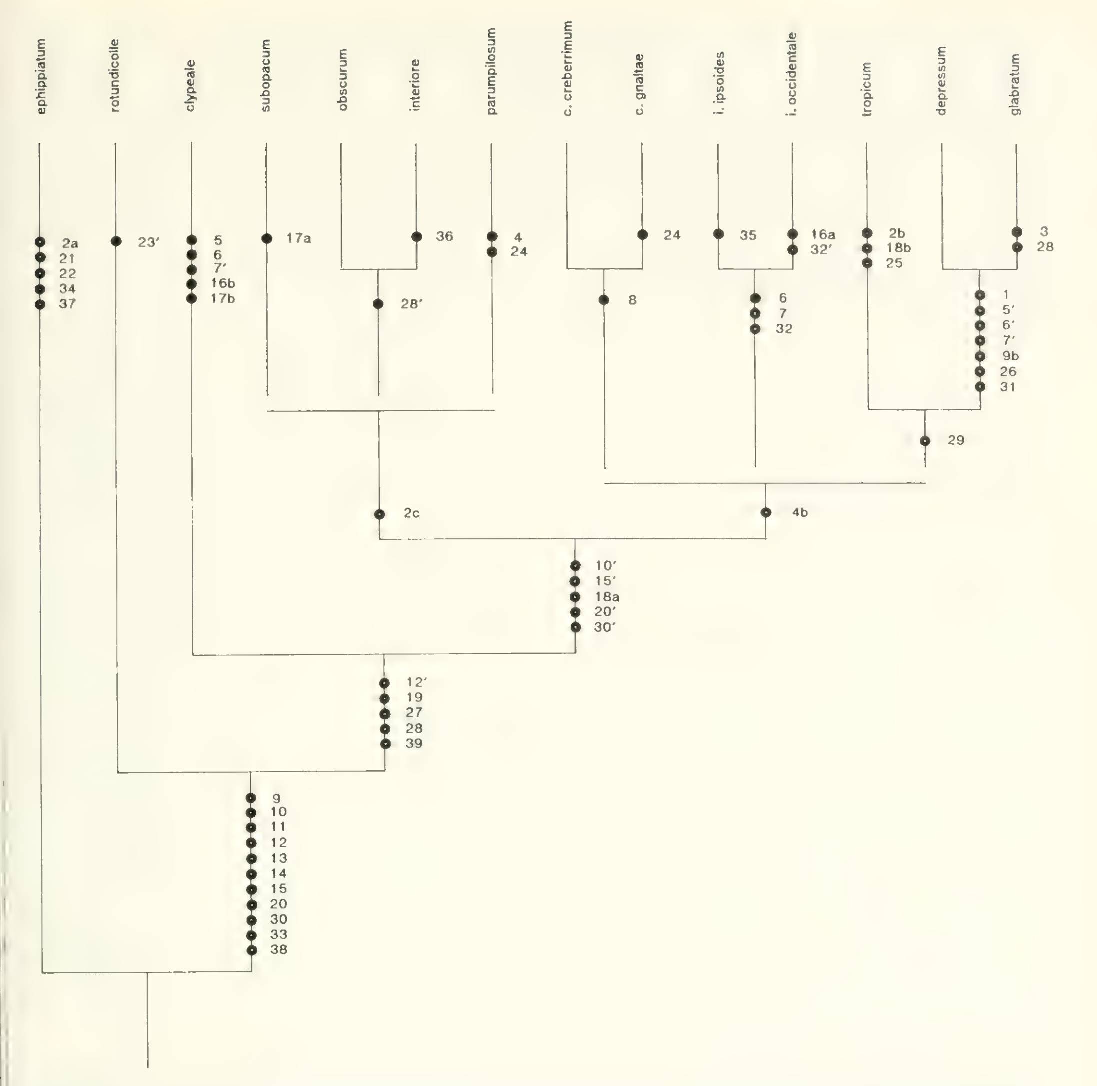


Fig. 278. Cladogram of the supposed relationships of the species of the genus *Cainogenion*, based on tables 10 and 11. Interrupted lines denote tri- or polytomies. For explanation of numbers see tab. 4 and tab. 5.

8.6. Phylogenetic relationships within the genus *Cryptocephalomorpha* Ritsema

With regard to the remarkably morphological uniformity caused by the high grade of specialization of the species, the phylogenetic relationships within the genus *Cryptocephalomorpha* are not easily discovered. The high specialization was presumably a further adaptation to the myrmecophilous habits, but as a consequence, now most species differ in minor characters only. Few clearly visible trends occur within the genus, i.e. towards more elongate, tube-like body shape, reduction of the elytral chetotaxy, development of an elytral colour pattern and generally lighter or more vivid colouration, further lengthening of the female genitalia, and lengthening and increasing complexity of the aedeagus. Decisions about synapomorphy or homoplasy are also rather difficult, because in some species only one sex is known.

Some clusters of character states that are generally connected and some apparently evolutionary trends of and within the genus *Cryptocephalomorpha* are discussed below.

Body size and shape. Although body size is small in *Cryptocephalomorpha*, there is the trend to further decrease of size and, at the same time, to a change from short, convex shape to more elongate, dorsally somewhat depressed shape. This trend is comparable with the same tranformation within the genus *Adelotopus*, but is less distinct in *Cryptocephalomorpha*. In combination with the development of more elongate elytra these are increasingly incurved ventrally to form a tube that is closed to at least ⅔ of its radius. Certainly this body shape gives a good protection against any injuries, e.g. from ants.

Mouth parts. In *Cryptocephalomorpha* the head is even more shifted to the ventral side than in the other genera and the mouth region is conspicuously overgrown by the anterior margin of the head. As a consequence, the mouth parts are tiny and to a large part covered. I even doubt that some mouth parts (e.g. the galea) still take a part in feeding. In their small size and almost completely covered position the mouth parts of *Cryptocephalomorpha* certainly represent the final state of a transformation from the normally shaped mouth parts in *Sphallomorpha* though several intermediate states. The ecological significance of these tiny mouth parts, however, is highly speculative.

Colour and pattern. As in other genera, in *Cryptocephalomorpha* pattern has been independently evolved, though its significance is likewise unknown. Apparently, vivid pronotal and elytral colouration has been evolved several times within the genus. The very light colouration of the *papua*-lineage may be an adaptation to strictly nocturnal activity, because it is combined with the presence of markedly enlarged eyes.

Elytra. Reduction of elytral setae is apparently a general trend within the genus and is seen in the umbilical series as well as in the fringe of marginal and submarginal setae that the most plesiotypic species *C. genieri* and *C. gaverei* still possess. The reasons for these reductions may be the same as discussed above under *Adelotopus*.

Legs. Although legs, especially tarsi, are generally shortened in *Cryptocephalomorpha*, this trend is remarkable in the *collaris*-lineage and may be also a further adaptation to the myrmecophilous habits.

Male and female genitalia. In the genitalia of both sexes the trend to further lengthening is to be recognized. Although the female genitalia are already remarkably elongate in all *Cryptocephalomorpha* species, they are once more elongated in the *collaris*-lineage. However, what significance the further lengthening has, is not known.

In the following list the status of the used character states is mainly derived from outgroup comparisons with the other pseudomorphine genera.

Tab. 12. Character states used for the construction of phylogenetic relationships of the species of the genus *Cryptocephalomorpha*. Different apomorphic states are distinguished by lower case letters. States of a morphocline are indicated by apostrophe (').

1. Main colour uniformly dark reddish: plesiomorphic by outgroup comparison; main colour yellow to light reddish (1): apomorphic.
2. Pronotum not contrastingly coloured: plesiomorphic by outgroup comparison; pronotum contrastingly red (2a) or contrastingly light yellow (2b): apomorphic, presumably two independent states.
3. Elytral pattern absent: plesiomorphic by outgroup comparison; elytral pattern consisting of two oblique elytral spots (3a) or consisting of two diffuse, but not oblique spots (3b) or consisting of two distinct circular spots (3b'); apomorphic, though presumably two independent states. State 3b with two states of a morphocline.
4. Size major: plesiomorphic by outgroup comparison; size minor (4): apomorphic.
5. Elytra rather short and wide, evenly convex: plesiomorphic by outgroup comparison; elytra rather elongate, dorsally somewhat depressed (5): apomorphic.
6. Elytral epipleura ventrally not incurved, visible from above: plesiomorphic by outgroup comparison; elytral epipleura ventrally slightly incurved, not visible from above (6) or ventrally markedly incurved (6'): apomorphic, two states of a morphocline.
7. Microreticulation present: plesiomorphic by outgroup comparison; microreticulation absent (7a) or secondarily reestablished (7b): apomorphic. With regard to the absence of the microreticulation in the most plesiomorphic species and its presence in the highly apomorphic *collaris*-group, and moreover the absence of puncturation in this latter group, I deem it possible, that microreticulation has been secondarily reestablished in the *collaris*-group.
8. Puncturation present, though very fine and sparse: plesiomorphic by outgroup comparison; puncturation present, rather coarse (8a) or present, remarkably coarse (8a') or absent (8b): apomorphic. Two different states, in 8a two states of a morphocline.
9. Eyes of normal size: plesiomorphic by outgroup comparison; eyes very large (9): apomorphic.
10. Mandibles laterally regularly curved and without toothlike projection: plesiomorphic by outgroup comparison; mandibles laterally excised and with toothlike projection (10): apomorphic.
11. Glossa large, far projecting: plesiomorphic by outgroup comparison; glossa small, almost hidden (11): apomorphic.
12. Antenna elongate, median segments almost as long as wide: plesiomorphic by outgroup comparison; antenna shortened and widened, median segments c. 2 × as wide as long (12) or very short and wide, median segments >2.5 × as wide as long (12'): apomorphic, two states of a morphocline.
13. Antennae with small lateral glandular areas: plesiomorphic by outgroup comparison; antenna with larger glandular areas (13) or with very large glandular areas (13'): apomorphic, two states of a morphocline.
14. Prosternal process but slightly lamelliform: plesiomorphic by outgroup comparison; prosternal process conspicuously lamelliform (14): apomorphic.
15. Lateral margin of elytra with distinct fringe of elongate setae at and below border in basal third: plesiomorphic by outgroup comparison; lateral margin of elytra without finge at border, but with fringe below border (15) or without finge at **and** below border (15'): apomorphic, two states of a morphocline.
16. About 6 lateral umbilical pores of elytra present: plesiomorphic by outgroup comparison; lateral umbilical pores absent (16): apomorphic.
17. Femora comparatively narrow and elongate: plesiomorphic by outgroup comparison; femaora short and wide (17): apomorphic.
18. Tibiae rather elongate, distinctly depressed: plesiomorphic by outgroup comparison; tibiae short and very compact (18): apomorphic.
19. Tarsi rather elongate, distinctly depressed dorsoventrally: plesiomorphic by outgroup comparison; tarsi very short and markedly compact, almost round (19): apomorphic.

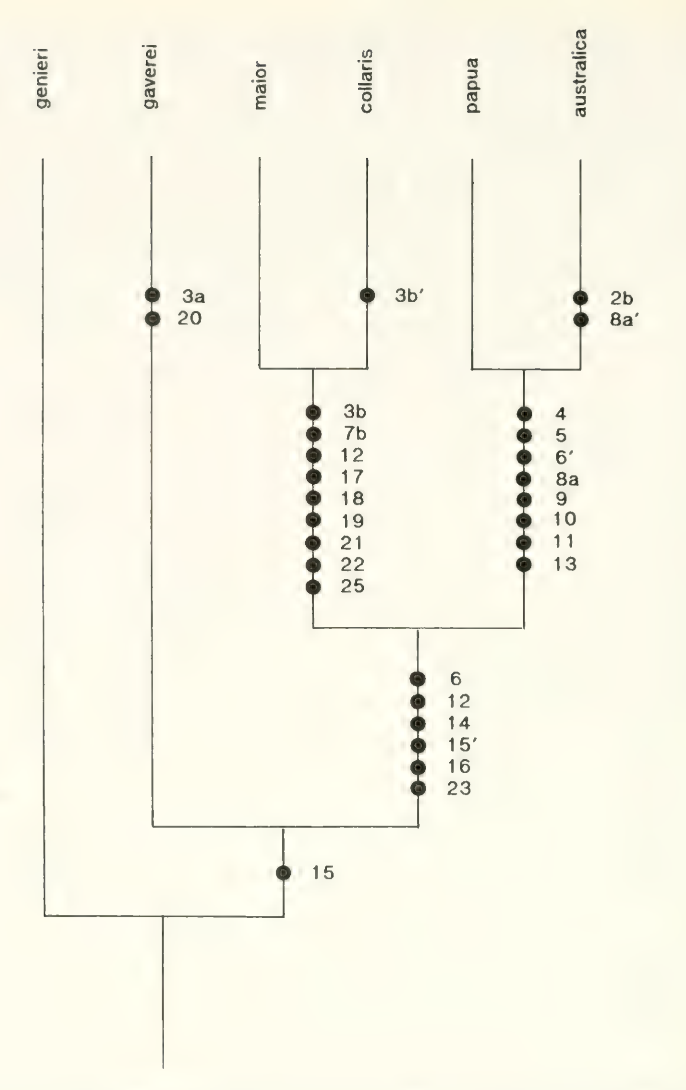


Fig. 279. Cladogram of the supposed relationships of the species of the genus *Cryptocephalomorpha*, based on tables 12 and 13. For explanation of numbers see tab. 4 and tab. 5.

20. Aedeagus symmetric with symmetric apex: plesiomorphic by outgroup comparison; aedeagus markedly asymmetric with asymmetric apex (20): apomorphic.

21. Aedeagus short with rather acute apex: plesiomorphic by outgroup comparison; aedeagus elongate with widely rounded apex (21): apomorphic.

22. Orifice fairly elongate: plesiomorphic by outgroup comparison; orifice remarkably short (22): apomorphic.

23. Parameres setose at apex: plesiomorphic by outgroup comparison; parameres asetose (23): apomorphic.

24. Genital ring rather symmetric: plesiomorphic by outgroup comparison; genital ring asymmetric (24): apomorphic.

25. ♀ genitalia shorter: plesiomorphic by outgroup comparison; ♀ genitalia more elongate (25): apomorphic.

Tab. 13. Character states of the species of *Cryptocephalomorpha*, numbered as in tab. 12. –: plesiomorphic state; number: apomorphic state; ?: state unknown. Other abbreviations as in tab. 4.

species	1	2	3	4	5	6	7	8	9	10	11	12	13
genieri	–	–	–	–	–	–	7a	–	–	–	–	–	–
gaverei	–	–	3a	–	–	–	7a	–	–	–	–	–	
maior	–	2a	3b	–	–	6	7b	8b	–	–	–	12'	13
collaris	–	2a	3b'	–	–	6	7b	8b	–	–	–	12'	13
papua	1	–	–	4	5	6'	7a	8a	9	10	11	12	13'
australica	1	2b	–	4	5	6'	7a	8a'	9	10	11	12	13'
species	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	
genieri	–	–	–	–	–	–	?	?	?	?	?	–	
gaverei	–	15	–	–	–	–	20	–	–	–	24	–	
maior	14	15'	16	17	18	19	–	21	22	23	24	25	
collaris	14	15'	16	17	18	19	?	?	?	?	?	25	
papua	14	15'	16	–	–	–	–	–	–	23	–	–	
australica	14	15'	16	–	–	–	–	–	–	23	–	?	

Even when some states of genitalic characters cannot be interpreted at present, the cladogram (Fig. 279) shows that *C. genieri* is the adelphotaxon of all other species, and again that *C. gaverei* is the adelphotaxon of the remaining species. Due to the presence of many plesiomorphic characters in both species they are rather similar in appearence. In some respects, however, *C. gaverei* is rather specialized and in many features it is less plesiomorphic than *C. genieri*.

The adelphotaxon of *C. gaverei* is characterized by several synapomorphies and it is again divided in two well established adelphotaxa (*collaris*- and *papua*-lineages) that are each characterized by several apomorphic character states and form clear monophyletic units. Within these lineages *C. collaris* and *C. australica*, respectively, are perhaps the most evolved species.

8.7. Evolutionary trends within the subfamily Pseudomorphinae

Although the adelphotaxon of the Pseudomorphinae is so far unknown, some ideas towards the evolution within the subfamily can be raised on the basis of the considerations made herein and in the first part of the revision (Baehr 1992a).

Many common characters of the Pseudomorphinae can be interpreted as adaptations to the life under bark, e. g. the wide, depressed body shape, the flattening of the femora that permit retracting the legs completely under the body and moreover tibiae and tarsi into the hollowed femora, the presence of still elongate tibiae and tarsi well equipped for rapid locomotion, the complete reduction of the discal elytral setae but, on the other hand, the persistence of the marginal setae of pronotum and the umbilical setae of the elytra.

On the basis of the considerations about the phylogenetic relations of the genera and their character sets and with regard to the adaptative characters mentioned above the ancestor of present Pseudomorphinae was presumably characterized by the following basic plan character states: rather large size (c. 8-12 mm); wide and rather depressed body shape; unicolourous black or piceous-black colour; prognathous head with wide gula; well developed mouth parts, especially galea and lacinia; large, not concealed labrum situated at same level with clypeus; laterally situated eyes; complete chetotaxy of head and mouth parts; complete chetotaxy of pronotum; striate elytra; absence of discal setae on elytra; presence of many umbilical setae; presence of fully developed wings; presence of several ambulatory setae on the abdominal sterna; presence of several ambulatory setae on sternum VI in both sexes; wide femora with a deep cleft for reception of tibiae; elongate tibiae and tarsi; distinct puncturation and microreticulation of the surface; presence of evident secondary sexual characters in structure of tarsi and in shape and number of ambulatory setae of abdomen and sternum VI; elongate, unspecialized aedeagus with rather simply folded, not evidently microdenticulate internal sac; rather similar parameres with respect to size and shape; divided, not elongated stylomeres; dentiform

stylomere 2 with several ventrolateral ensiform setae, one dorsomedian ensiform setae, and presumably 2 subapical nematiform setae originating from a groove; oviparous parturation.

Many of these character states persist in the most plesiotypic species of the genus *Sphallomorpha* that in many respects represent the basic plan ("Grundplan" sensu Hennig) of *Pseudomorphinae.* As demonstrated earlier (Baehr 1992a), within this genus presumably the species of the *semistriata-* and *laevis-*groups are closest to this hypothetical basic plan, but some plesiotypic species of the genera *Pseudomorpha* and *Adelotopus* show still many characters of such basic plan.

This basic plan has been changed repeatedly in different lineages due to certain morphological trends that are perhaps general trends within Pseudomorphinae. Their evolutionary significance will be discussed below. Main trends that can be observed within several lineages and genera are directed towards the following transformations: reduction of size; development of narrower, convex body shape, or of very wide, depressed body shape, or of elongate, highly convex and cylindrical body shape, or of elongate and convex but dorsally depressed body shape; development of an – occasionally very complex – elytral, sometimes also pronotal pattern; clearing up of colouration; shift of the head to an almost orthognathous position; reduction of the gula and some of the inner mouth parts; enlargement of the supramaxillary plates; development of the subocular area to a subocular cavity and plate; general reduction of the chetotaxy on head, pronotum, elytra, and abdomen; reduction of the striation of the elytra; reduction of puncturation and microreticulation of the surface; shortening and widening of the legs including tibiae and tarsi; general reduction of secondary sexual characters; specialisation of the male genitalia, in particular of the internal sac; specialisation of the female stylomeres, especially fusion of the stylomeres, or considerable lengthening of stylomeres and genital segment; reduction of the ensiform and nematiform setae on the stylomeres; development of larviparous parturation.

The evolutionary significance of some character trends mentioned above is not evident, but may be connected with reproductive behaviour due to the increasing numbers of closely related taxa: e.g. development of a complex colour pattern, specialisation of male genitalia. But almost all other trends can be interpreted as adaptations to myrmecophilous habits. This is especially evident for the development of a convex body shape, reduction of microstructure of the surface, reduction of the chetotaxy, development of the orthognathous mouth, specializations in the subocular region of the head, shortening of the legs, changes in the female ovipositor, and development of the larviparous parturation. These trends can be generally regarded either as acquisition of a compact, well armoured body that is well protected from attacks by ants, or as adaptations to the development of the offspring in ant nests.

Evidently only few adaptations to myrmecophilous habits are present in the most plesiotypic genus *Sphallomorpha* and but few more in the likewise plesiotypic genus *Pseudomorpha.* In the other genera, however, these adaptations are highly evident and presumably they are by far prevailing over the basic adaptations to the subcorticolous life, even when the species of the apotypic genera likewise live under bark.

It should be stressed, however, that within the larger genera *Sphallomorpha, Pseudomorpha,* and *Adelotopus,* and even to some extent in *Cainogenion,* further transformations occurred that were extensive in many cases and considerably changed the external appearence as well as shape and structure of the genitalia in both sexes.

Evolution within *Sphallomorpha*. As explained above, *Sphallomorpha* is certainly at present in many respects the most plesiotypic genus of Pseudomorphinae that may have conserved the appearance of the common ancestor of the whole subfamily. Most characteristics of the genus might be adaptations to the life in crevices, i. e. under bark, few are undoubtedly referable to myrmecophilous habits. Even the larvae of *Sphallomorpha* are rather standard and show few of the characteristics of the more evolved larvae of the other genera.

Within *Sphallomorpha* some trends mentioned above can be observed, though usually to a rather limited extent: e.g. towards smaller size, convex shape, reduction of elytral striation, puncturation, and microreticulation of the surface, towards some reduction of the chetotaxy of head, pronotum, elytra, and abdomen, some shortening of the legs, but to a far lesser extent than in most other genera, and to development of different patterns. Pattern, however, is in *Sphallomorpha* more common and more variable than in the other genera, and, moreover, within this genus the most intricate and vivid patterns of the whole subfamily are found, and even metallic colouration has been evolved. Some

opposite trends, however, are also worth noting, especially those towards larger size than usual and at the same time towards extreme widening and flattening of the body, in particular of the lateral margins of the pronotum. These transformations are connected with remarkable shortening of the body in some taxa. Even multiplication of chetotaxy occurs, e. g. of umbilical setae in the *lata*-group and of marginal pronotal setae in the highly apotypic *nitiduloides*-group (see Baehr 1992a). It should be once more noted that the male genitalia in *Sphallomorpha* are even basically rather complex and show the trend to become even more intricate.

Apparently most of the evolution within *Sphallomorpha* seems to have produced better adapatations to the subcorticolous life, whereas adaptations to myrmecophily have been apparently fewer.

Evolution within *Pseudomorpha*. Basically this genus is morphologically but little more transformed than *Sphallomorpha*. The larviparous parturation, however, was a very important step towards adaptation to myrmecophilous habits. In many other respects, however, the most basal *Pseudomorpha* species recall basal *Sphallomorpha* species in shape, structure of head, chetotaxy, and structure of male and female genitalia.

Compared with the large genera *Sphallomorpha* and *Adelotopus* evolution within *Pseudomorpha* was rather limited and the genus offers a fairly uniform picture, at least in external appearance. There is apparently no distinct colour pattern, most species are still rather large and show the same moderately wide and convex shape, legs are still elongate, and the male genitalia are still rather simple. On the other hand main trends within the genus are: towards rather narrow, convex body shape, especially in the flightless Australian species, augmentation of the elongate pilosity along the lateral margins and on the dorsal surface, development of a deep incision in the anterior margin of the head laterally of clypeus, transformation of the originally short and rather standard female genitalia into highly apomorphic ones with elongate, needle-shaped stylomere 2.

The transformation of the ovipositor is certainly an adaptation to a different mode of oviposition (actually "larviposition") and is regarded as a step to myrmecophilous habits. The remarkable hirsute surface may be another adaptation to the life by ants and could be a means of protection against attacks from ants, and the development of an incision in the margin of the head could be a parallel development to the transformation of the subocular area in *Cainogenion* and *Paussotropus*, and thus could be likewise an adaptation to myrmecophily.

Unfortunately it is uncertain, why the Australian species of this generally well flying genus became flighless and have reduced their wings and in combination to this have changed their body shape to that considerable extent.

Evolution within *Adelotopus*. The most basal species of *Adelotopus* resemble in body shape the two more primitive genera, though they already show some transformations that become more and more evident in the more evolved species within the genus. All species of *Adelotopus* already possess the orthognathous position of the head, shortened and fairly depressed legs, markedly reduced chetotaxy, reduced secondary sexual characters, and highly transformed female stylomeres. However, they have a basically simple aedeagus and they lack the more apomorphic features of the most evolved genera *Cainogenion* and *Paussotropus*, and again *Cryptocephalomorpha*. Within the genus the mentioned trends become very striking, and finally, the most apotypic species of *Adelotopus* are rather strange looking, highly specialized animals strongly adapted to myrmecophilous life. Within the genus the male genitalia became also rather complicated and some fairly intricate elytral patterns have been evolved.

Evolution within *Cainogenion* and *Paussotropus*. Both genera are certainly very closely related and in many respects *Paussotropus* shows even better adaptation to the myrmecophilous life than *Cainogenion*. This is especially true with respect to the elongate body shape, extreme shortening and strenghthing of the legs, complete loss of secondary sexual characters, light colouration, and even more extensive reduction of the mouth parts. *Cainogenion*, however, is apomorphic in the transformation of the subocular region which is in *Paussotropus* still rather simple. Hence the basic adaptations of both genera are extensive, but within *Cainogenion* there are some minor trends towards multiplication of chetotaxy on the head, increasing size of dorsal punctures alongside with general reduction of puncturation. Altogether, however, little further evolution occurred within the genus *Cainogenion* and both genera seem to form the one final point of the phylogenetic tree of the Pseudomorphinae – the other is formed by the genus *Cryptocephalomorpha*.

Evolution within *Cryptocephalomorpha*. As mentioned above, this genus is the other final point of the phylogenetic tree of Pseudomorphinae, and it is likewise extremly transformed and highly adapted to myrmecophilous habits. All species of *Cryptocephalomorpha* are basically highly apomorphic in their tiny size, very convex shape, glossy surface, extremely orthognathous mouth parts that are markedly overgrown by the forehead, remarkably shortening and strenghthening of the legs though without widening of the tibiae, basically simple aedeagus with rather strangely shaped parameres, and markedly elongate female genitalia which have both stylomeres elongate and stylomere 1 elongated to an exceptionally high degree (not only stylomere 2 as in *Pseudomorpha*!). This highly adaptive body shape seems rather successful, because little further evolution occurred within this genus: the only trends are towards elongation of the body, covering of the abdomen by increasing incurvation of the epipleura of the elytra, further reduction of the chetotaxy of the elytra, development of a rather simple elytral pattern, further elongation of the female genitalia, and development of a more complexly built aedeagus. Most of these transformations occurred in species of the Oriental and Australian Regions and they seem to represent even better adaptations to the myrmecophilous life.

To conclude, it may be stressed that in all genera some evolutionary trends towards a better adaptation to myrmecophilous habits occurred at the costs of certain adaptations to the subcorticolous life, in particular body shape and running ability.

9. Zoogeography

9.1. Introduction

Ideas presented here about distribution patterns and geographical history of Pseudomorphinae are tentative both because of limited knowledge of the geographical ranges of most taxa with exception of few common species from southeastern Australia, and because of uncertainties about their phylogenetic relationships. Perhaps, they will be improved in future due to better knowledge of the actual ranges of the species and to better understanding of the phylogenetic relationships. Nevertheless, to increase knowledge about taxa, hypotheses are formulated to explain the observations in a general context. These hypotheses are based on general principles enunciated by previous authors which in turn are based on their observations.

I think that knowledge of the phylogenetic relations of the species is prerequisite for any considerations about historical biogeography. Indeed, I do not thrust the unweighed clues to geographical history used by Darlington (1957, 1971) and repeated by Erwin (1970), but for the evaluation of the historic events in biogeography I regard knowledge of the phylogenetic relations of the species highly important. Hence, in general, I follow the considerations of Hennig (1966) and Brundin (1966) in that plesiomorphy of a taxon and place of origin are commonly correlated, that the most highly evolved taxa are therefore usually found at the margins of the range of the supraspecific taxon, and that this pattern of distribution is mainly caused by vicariance and may sometimes reflect a continuous distribution on old land masses that are dismembered today. However, in certain instances it may be caused even by pure dispersal, e.g. when new areas are colonized that are later separated by geographical or ecological barriers, or when species are transported drifting on terranes over certain distances. In general, nevertheless, it may be rather an interaction of vicariance and dispersal events, as illustrated below and elsewhere (Baehr 1991, 1992a, b, 1995) for speciation events in Australia during the pleistocene.

As a first step distributions of the species-groups of *Adelotopus* and of its species, and of the species of the other genera are listed below with special aim to distinguish between the distribution of the plesiotypic and apotypic species, respectively. For definition of the phylogenetic state of the species-group, the number of dichotomies in the cladogram (Fig. 277) is used as a measure for the grade of apomorphy. Thus, in this list stage 1, 2, 3 etc. means 1, 2, 3 etc. dichotomies.

Then, patterns of distribution on an ecographical base are postulated, and finally these patterns are correlated with the phylogenetic status of the species that belong to them.

In the following list **Range** is the total range of the respective species-group or genus, and **?** means doubtful records that are likely possible. Doubtful records that are rather unlikely have been omitted from this list.

9.2. Distribution patterns

9.2.1. Distribution of genera and of species-groups of *Adelotopus*: phylogenetic correlations

Genus *Pseudomorpha*, subgenus *Austropseudomorpha*. 3 species and 1 additional subspecies. **Range**: northwestern Vic, southeastern NSW, southern WA.

The presumably most plesiotypic species occurs in northwestern Vic and southeastern NSW. A more apotypic species occurs in southern WA, and the perhaps most apotypic species is found in the southwestern corner of WA.

The crucial question in *Pseudomorpha* is the area, where the ancestor of the Australian species originated, and, if this ancestor came from outside of Australia, when it immigrated into this continent. The present sample of species, however, originated apparently in southeastern Australia and spread rather recently to Western Australia.

Genus *Adelotopus*. 118 species and additional 9 subspecies in 26 species-groups. **Range**: Whole Australia, New Guinea, Solomon Islands, Java, and Malaysia.

1. ***Dytiscides*-group**. Basically very plesiotypic group (**stage 1**) with 7 species. **Range**: eastern SA, Vic, ACT, eastern NSW, eastern Qld, southwestern WA, eastern NG; ?: northern NT.

The most plesiotypic species *A. dytiscides* occurs in southeastern Australia from eastern SA to southeastern Qld, and in southwestern WA. Slightly less plesiotypic species occur in eastern and northeastern Qld, and perhaps also in northern NT (*A. ulrichi, A. latior*). A more apotypic species occurs in the southern Cape York Pensinula, northeastern Qld (*A. zborowskii*), and the most apotypic species of this group live either in northeastern Qld and eastern NG (*A. apicalis*), either in the interior of southern WA (*A. sericeus, A. howdeni*).

Hence this group evolved certainly in southeastern Australia and invaded southwestern Australia twice, earlier by the ancestors of the apotypic *A. sericeus* and *A. howdeni* and very recently by the plesiotypic *A. dytiscides.*

2. ***Katherinei*-group**. Moderately apotypic group (**stage 5**). 1 species only. **Range**: northern NT.
The single species is closely related to the *brevipennis*-group and is perhaps an early branch of the ancestor of the latter group.

3. ***Brevipennis*-group**. Rather apotypic group (**stage 6**). 12 species and 2 additional subspecies. **Range**: eastern SA, Vic, eastern NSW, eastern Qld, northern NT, northern WA, southern WA.

Although this group occurs throughout the whole of southeastern and eastern Australia, most of the species live in northern NT and northern WA and only a single species occurs in southeastern Australia.

The most plesiotypic species lives in northern NT (*A. adelaideae*). More apotypic species live in northern WA (*A. elongatulus, A. rufescens*), northern NT (*A. flavus*), central southern WA (*A. piceus*), and southeastern Australia north to central eastern Qld (*A. sinuaticollis*). Even more apotypic species live in eastern Qld (*A. longus*), extreme northern Qld at the tip of Cap York Peninsula (*A. bamagae*), northeastern NT (*A. rufomarginatus*), northern NT (*A. edithae, A. rufozonatus*), and northern NT and adjacent northern WA (*A. brevipennis*).

This is essentially a northern group. Because the most plesiotypic species also occurs in the far NT, this group evolved apparently in northern Australia and stems presumably from an ancestor that was rather similar to certain apotypic species of the *dytiscides*-group.

4. ***Atrorufus*-group**. Rather apotypic group (**stage 6**). 1 species only. **Range**: southwestern NSW.
Certainly this species shares a common ancestor with the *brevipennis*-group that invaded the interior of Australia from the east or northeast.

5. ***Marginicollis*-group**. Moderately apotypic group (**stage 4**). 3 species. **Range**: northwestern Qld, central NT, central WA.

This is essentially a species-group of the dry interior.

The most plesiotypic species occurs in northwestern Qld (*A. marginicollis*), more apotypic species occur in central NT (*A. coriaceus*) and in central WA (*A. seminitidus*). Due to the many special features of this group, it seems rather isolated, but it is presumably related to the *katherinei-brevipennis-atrorufus-*

stock and evolved perhaps in northern Australia, from where it later invaded Central and central Western Australia.

6. *Exactor*-**group**. Basically rather plesiotypic group (**stage 3**) with some specialized features. 1 species only. **Range**: eastern NG.

The relationships of the single species are obscure, though it shows remote affinities to the *dytiscides*- and *politus*-groups, respectively.

7. ***Politus*-group**. Basically rather plesiotypic group (**stage 4**). 17 species and 1 additional subspecies. **Range**: eastern SA, Vic, ACT, eastern NSW, eastern and northern Qld, Tas.

This group is virtually distributed in eastern Australia only and most species occurr in the area from northeastern NSW to central eastern Qld. Due to the highly uniform structure only groups of slightly more plesiotypic or apotypic species can be fixed. Under those premises the unpatterned species of the *politus*-subgroup that are perhaps most plesiotypic are mainly distributed in the area from northern NSW to southeastern Qld with the rather plesiotypic *A. politus* widely distributed over the whole of eastern Australia from eastern SA to northeastern Qld, and a rather apotypic species (*A. sedlaceki*) occurring in the Cape York Peninsula in northernmost Qld.

Of a basally slightly more apotypic second subgroup the most plesiotypic species occur in southeastern Australia, whereas more apotypic species live in southeastern Qld and especially in northeastern Qld.

The third, most apotypic subgroup occurs only in eastern Qld, though the distribution of the presumably most apotypic species (*A. clepsydra*) is still unknown.

As a conclusion, this group seemingly originated in southeastern Australia, from where more apotypic subgroups and /or species invaded central eastern and northeastern Qld, where today the most apotypic species live.

8. ***Multipunctatus*-group**. Rather apotypic group (**stage 6**). 12 species. **Range**: central eastern and northeastern Qld, northern NT, northern WA, eastern NG, Solomon Islands, Java, Malaysia.

This is essentially a northern tropical group and altogether the single species-group that crossed the boundaries of the Australian Region to the north and east. No species can be fixed as undoubtedly most plesiotypic, because the species are generally very similar and most species are in certain ways apotypic and the character distribution is highly heterobathmic. However, of two evident groups of vicariants the more apotypic species always lives in the northern part of the common range, e. g. *A. geminus* (central eastern Qld) – *A. laticaudatus* (northernmost Qld: tip of Cape York Peninsula), and *A. nitidior* (northern Qld) – *A. debitor* (eastern NG).

This group is still very similar to the *politus*-group and was presumably derived from a *politus*-like ancestor. The apotypic species live generally in the more northern part of the range. Hence, this group might have originated in central eastern or northeastern Queensland, from where it colonized the tropical north of Australia, as well as the Papuan Subregion and the Oriental Region.

9. ***Obsoletus*-group**. Rather apotypic group (**stage 6**). 1 species only. **Range**: central eastern and northeastern Qld.

The single species is perhaps a rather apotypic offshoot of the *multipunctatus*-stock.

10. ***Villosus*-group**. Moderately apotypic group (**stage 5**). 1 species only. **Range**: northeastern Qld. Likewise an offshoout of the *multipunctatus*-stock.

11. ***Similis*-group**. Moderately apotypic group (**stage 5**). 1 species only. **Range**: eastern Vic, ACT, northeastern NSW; **?**: eastern SA.

The affinities of this group are somewhat obscure, and despite ist external similarity with species of the *politus*- and *multipunctatus*-groups, it may be actually related to the follwoing *nigricauda-linearis*-lineage.

12. ***Tasmani*-group**. Rather apotypic group (**stage 6**). 1 species only. **Range**: Tas.

Highly enigmatic group that combines plesiotypic with highly apotypic characters. Since not even the distribution is fully settled, little can be said about its origin, but it seems at most remotely related to the *nigricauda-linearis*-lineage.

13. ***Nigricauda*-group**. Apotypic group (**stage 7**). 1 species only. **Range**: northern Cape York Peninsula, northeastern Qld.

The single, rather aberrant species is presumably a remote offshoot of the of the *seriepunctatus-linearis*-lineage.

14. ***Seriepunctatus*-group**. Highly apotypic group (**stage 9**). 5 species and additional 2 subspecies. **Range**: s. SA, Vic, ACT, s. NSW, e. Qld, s. WA.

Most species of this group occur in southeastern Australia, where also the apparently most plesiotypic species (*A. seriepunctatus*) lives, but a subspecies of one apotypic species (in view of the shape of the aedeagus) occurs also in southern WA (*A. puncticollis angustemaculatus*). Rather apotypic taxa occur in eastern (*A. seriepunctatus striatus, A. convexus*), and even in northeastern Qld (*A. calvus*).

Due to many special features the affinities of this group are rather obscure, but it is perhaps related to the *rubiginosus-laevis*-lieange, though has undergone considerable evolution. The group originated presumably in southeastern Australia and later invaded northern Qld and southern WA.

15. ***Rubiginosus*-group**. Very large, highly apotypic group (**stage 10**). At present 21 species. **Range**: virtually all mainland states of Australia.

Although this group occurs in all major faunal regions of Australia, remarkably many species occur in the interior or in the drier parts of all states. This applies in particular to several rather apotypic species (e. g. *A. flavescens, A. grossepunctatus, A. ooldeae, A. crucis, A. crassus, A. latipalpis* etc.). Because the distribution of many species is very inadequately known, little can be said about the area of origin of this group. The group, however, embraces remarkably wide-ranging species (e.g. *A. rubiginosus, A. laticollis, A. virgatus, A. flavescens*) on the one hand, and many species with at present very limited distributions.

The wide distribution of some species somewhat obscures the origin of this group. Most of the undoubtedly apotypic species occur in the drier parts of the south and in interior NT and WA. Hence, I think that the area of origin of this group was either in temperate southern or southeastern Australia or in eastern Queensland.

16. ***Laevis*-group**. Highly apotypic group (**stage 10**). 3 species and 1 additional subspecies. **Range**: central eastern and northern Qld, northern, central western, and southern WA.

Judging from the structure of aedeagus, the most plesiotypic species occurs in central eastern Queensland (*A. c. ciliatus*), a more apotypic subspecies lives in northeastern Qld (*A. c. tenuipunctatus*), a slightly more apotypic species and perhaps the western vicariant of *A. ciliatus* occurs in southern WA (*A. brevior*), whereas the most apotypic species ranges over northern tropical Australia from north Qld to northern WA (*A. laevis*).

The origin of this group which is the adelphotaxon of the *rubiginosus* -group may have been also in central eastern Queensland.

17. ***Unicolor*-group**. Highly apotypic group (**stage 9**). 1 species only. **Range**: southern WA.

The single, highly apotypic species is presumably the adelphotaxon of the *linearis*-group.

18. ***Linearis*-group**. Highly apotypic group (**stage 9**). 2 species. **Range**: eastern Qld, northern NT, northern WA; **?**: NSW.

The distribution of the presumably slightly more plesiotypic species *A. bacillus* is not settled (recorded range: northern NT and NSW), but more probably it occurs in the far NT, because this record is specified, whereas the second specimens is purely labelled "N.S.W.". The more apotypic species *A. linearis* ranges over whole tropical Australia. The origin of this group may have been therefore somewhere in northern tropical Queensland.

19. ***Celeripes*-group**. Basically very plesiotypic group (**stage 0**) with some autapotypic features, respectively. 1 species only. **Range**: southern WA.

The relationships of this unique species are obscure. It must be an old element of the southwest.

20. ***Gyrinoides*-group**. Rather plesiotypic group (**stage 1**). 17 species and additional 3 subspecies. **Range**: eastern SA, Vic, ACT, NSW, eastern Qld, southern WA, Tas, eastern NG.

This is predominantly a southeastern group with few species or subspecies occurring in southwestern Australia, and it is altogether one of the few species-groups that is represented in Tasmania. The most plesiotypic species occur in southeastern Australia including Tasmania (*A. vicinus, A. dubius*).

Slightly more apotypic species live in southeastern Australia up to entral eastern NSW and in southern WA. Only species of the most apotypic subgroup range into southeastern and central eastern Qld, and a single highly apotypic species only occurs in northeastern Qld and eastern NG (*A. rufoguttatus*).

This group clearly originated in temperate southeastern Australia and later colonized southern WA as well as northeastern Qld and even New Guinea.

21. ***Punctulifer*-group**. Basically rather plesiotypic group (**stage 2**), though highly apotypic with regard to the striking aedeagus. 1 species only. **Range**: northeastern NSW and southeastern Qld.

The single species is presumably a specialized offshoot of the *gyrinoides*-stock.

22. ***Analis*-group**. Basically rather plesiotypic group (**stage 2**) with one highly apotypic, very special feature. 1 species only. **Range**: central eastern Qld.

The single species is presumably very closely related to the *gyrinoides*-group or may be even an offspring of one of the more plesiotypic lineages of this group. So far known, it is very locally distributed in a small area in central eastern Qld.

23. ***Paroensis*-group**. Basially rather plesiotypic group (**stage 2**), though highly apotypic with regard to the striking aedeagus. 1 species only. **Range**: eastern SA, Vic, NSW, eastern Qld.

The single, very common species is widely distributed in southeastern Australia, where it goes also far inland in Vic and NSW. Its relationships are perhaps more close to the *fasciatus-maculipennis*-lineage, and it may be the plesiotypic adelphotaxon of the latter. Its area of origin is thus far unknown.

24. ***Fasciatus*-group**. Moderately plesiotypic group (**stage 3**). 1 species only. **Range**: eastern Vic, southeastern NSW, ACT.

This is presumably the plesiotypic adelphotaxon of the *nemosomoides-maculipennis*-lineage.

25. ***Nemosomoides*-group**. Apotypic group (**stage 4**). 3 species. **Range**: eastern SA, Vic, ACT, southeastern NSW.

This group ranges apparently over southeastern Australia, though the distribution of one species (*A. conicollis*) is unknown. The distributions of both other species are rather similar, although that of the peculiar and even more apotypic *A. longiformis* is apparently more restricted.

26. ***Maculipennis*-group**. Apotypic group (**stage 4**). 2 species. **Range**: northwestern Vic, southwestern NSW, eastern Qld, southern and central western WA.

The perhaps slightly more plesiotypic species occurs in whole eastern Qld, the second species in inland and western Australia, where it presumably immigrated later.

Genus *Cainogenion*. 12 species and additional 2 subspecies. **Range**: SA, Vic, ACT, NSW, eastern and northern Qld, central and northern central NT, northern WA, southern WA.

The genus is distributed over almost the whole of mainland Australia, with exception of the Cape York Peninsula in northern Qld, the northern part of NT, and central western WA. Most species occur in southeastern Australia, several, however, live or at least range far inland. The most plesiotypic species and single representative of the plesiotypic subgenus *Procainogenion* (*C. ephippiatum*) lives in southeastern Australia from eastern SA to southeastern Qld. Of the apotypic subgenus *Cainogenion* s. str. the most plesiotypic species lives in southwestern Australia (*C. rotundicolle*), another basically plesiotypic species (*C. clypeale*) that possesses, nevertheless, several highly autopotypic characteristics, occurs in northeastern Qld. Other, basically somewhat more apotypic species occur in eastern and northeastern Australia, and in interior and northwestern Australia. Even more apotypic species occur in southern Australia from western NSW to southwestern WA, but they are rather inland species or at least adapted to rather dry conditions. Highly apotypic species (*C. glabratus* and *C. depressus*) occur in central SA and in the interior of southern WA under fairly dry conditions.

Certainly the genus originated in temperate southeastern Australia, from where it rather early distributed to northeastern, central, and western Australia. Only rather apotypic species were apparently able to colonize the drier parts of the continent.

Genus *Paussotropus*. 1 species only. **Range**: All mainland states, though due to insufficient labelling of many specimens the actual distribution is not well known.

According to the presumable origin of the sister-genus *Cainogenion* in southeastern Australia we

must suppose that *Paussotropus* originated in the same area, but later spread over almost the whole of Australia.

Genus *Cryptocephalomorpha*. 6 species. **Range**: Malaysia, Thailand, North Vietnam, Philippine Islands, Sumatra, Java, Bali, Borneo, eastern New Guinea, Solomon Islands (Guadalcanal), northern Qld (Cape York Peninsula), South Africa.

According to the recent discovery of one species (actually a single specimen) in South Africa, the genus has a very strange distribution. The apparently most plesiotypic species *C. genieri* lives in South Africa and represents the adelphotaxon of all other species. Another rather plesiotypic species (*C. gaverei*) is widely distributed in mainland and insular southern Asia (from Malaysia through Thailand to the Greater Sunda Islands and Bali). One apotypic species-group ranges from Thailand to Vietnam and to the Philippines, and the other apotypic species-group occurs in the Australian Region from New Guinea to the Solomon Islands and to North Queensland, where the most apotypic species lives.

There is every reason to believe that the genus originated in southern Africa, from where it reached the Oriental region, where the main evolution took place. The Papuan and Australian members are certainly very recent invaders into the Australian Region.

9.2.2. Ecographical patterns of distribution

For a long time, three or four main faunal provinces have been recognized within Australia (Spencer 1896, Keast 1959, Mackerras 1970, Cranston & Naumann 1991) that are fully explained in the first part of the revision (Baehr 1992a, p. 379): namely the temperate Bassian Province, with the Southwestern Province sometimes subdivided, the eremenian Eyrean Province, and the tropical Torresian Province (Fig. 280). Nix (1982) and Cracraft (1982) further explained the primary determinants of the past and present distribution patterns.

On the basis of the present knowledge which is based on a very large part of the available material, it is possible to distinguish several distribution patterns from which further faunal subregions within the major faunal provinces can be derived. Each of these subregions include species having more or less the same range. Some of these, however, characteristically exceed the borders of the main faunal provinces, demonstrating that these are not too rigid. The different faunal subregions based on distribution patterns are listed below with the species belonging to them. Species are listed in the same order as in text and for the species of the genus *Adelotopus* the respective number of the species-group is added.

However, for many species the distributional data are few and in some species (*Adelotopus semilunatus, A. clepsydra, A. punctatissimus,* and *A. conicollis*) no locality data are available. Thus the following table is preliminary and will be changed in future according to additional data.

1. **Southern**, including southeastern Australia from eastern South Australia to southern Queensland, but also southwestern Australia:

A. dytiscides – 1

This is the classical "Bassian" distribution in its widest sense. Species with this distribution pattern are adapted to cool to warm temperate, rather wet climate.

2. **Southeastern**, including the eastern part of South Australia, Victoria, Tasmania, Australian Capital Territory, New South Wales, and southeastern Queensland:

A. s. sinuaticollis – 3
A. politus – 7
A. minor – 7
A. haemorrhoidalis – 7
A. similis – 11
A. p. puncticollis – 14
A. d. dubius – 20
A. paroensis – 24
A. nemosomoides – 25
Cainogenion i. ipsoides
Cainogenion obscurum
Cainogenion ephippiatum



Fig. 280. Map of the major faunal provinces of Australia. **B:** Bassian, **E:** Eyrean, **S:** Southwestern (Bassian), **T:** Torresian provinces.

This is the "Bassian" distribution pattern in its restricted sense. Most listed taxa occur in a large part of this area within mainland Australia, and few species only are absent from either southern Queensland or eastern South Australia, respectively. Tasmania certainly belongs to this faunal area, but has apparently a poor pseudomorphine fauna and presumably even some endemic taxa (see below 4.). The species are likewise adapted to cold to warm temperate, rather wet climate.

3. **Kosciuskoan**, including montane eastern Victoria, southeastern New South Wales, and the Australian Capital Territory:

Pseudomorpha insignis pilosa
A. variolosus – 7
A. s. seriepunctatus – 14
A. montisatri – 14
A. gyrinoides orientalis – 20
A. vicinus – 20
A. dubius glaber – 21
A. montorum – 21
A. lawrencei – 20
A. victoriensis – 20
A. lunatus – 20
A. gippslandicus – 20
A. fasciatus – 23
A. longiformis – 25

All species with this distribution pattern are adapted to cold to cool temperate, wet climate and most prefer rather high altitudes, or are at least more common there. Generally, this is a rather montane fauna.

4. **Tasmanian**, including endemic taxa of Tasmania:

A. tasmani – 12
A. dubius hobartensis – 20

Since the single specimen of *A. tasmani* is only labelled "Tasmania", little can be said, to which climatic regime it is adapted, nor even, whether this is an endemic species of Tasmania. Generally species of the Tasmanian subregion should be adapted to cold to cool temperate, wet climate.

5. **Murrayan**, including northwestern Victoria, eastern South Australia, and western New South Wales:

Pseudomorpha i. insignis
A. atrorufus – 4
A. murrayanus – 20
Cainogenion c. creberrimum
Cainogenion creberrimum gnaltae
Cainogenion glabratum

The species with this distribution pattern are adapted to warm temperate, but at the same time rather dry climate.

6. **East Australian**, including eastern Victoria, Australian Capital Territory, eastern New South Wales, and eastern Queensland:

A. zonatus – 20
A. macilentus – 20

These species are adapted to warm temperate conditions as well as to subtropical and even tropical environment. However, they usually do not go as far north as the species listed under 7.

7. **Eastern coastal**, including the whole eastern part of Queensland and northeastern New South Wales:

A. ulrichi – 1
A. foliaceus – 15
A. cribricollis – 15
A. queenslandicus – 15
A. rufoguttatus – 20
A. maculipennis – 26
Cainogenion tropicum

Most species with this distribution pattern are more common in the northern part of their range, and actually, not all occur in northern New South Wales which is included in this area, because the environment is much the same as in the southern half of Queensland. All species are adapted to tropical and subtropical, rather wet climate.

8. **Macphersonian**, including northeastern New South Wales and adjacent southeastern Queensland:

A. aterrimus – 7
A. doyeni – 7
A. substriatus – 7
A. nitens – 7
A. bimaculatus angustior – 7
A. convexus – 14
A. parumpunctatus – 20
A. affinis – 20
A. basirufus – 20
A. punctulifer – 21
Cainogenion subopacum

Some species having this distribution pattern occur only in northern New South Wales or in southern Queensland, several have very restricted ranges, mainly on isolated tablelands. They are adapted to warm temperate to subtropical, rather wet climate.

9. **Capricornian**, including the central part of eastern Queensland from about Gayndah in the south to Mackay in the north:

A. l. longus – 3
A. sinuaticollis calliope – 3
A. caniae – 7
A. rufocaudatus – 7
A. geminus – 8
A. obsoletus – 9
A. seriepunctatus striatus – 14
A. aequus – 15
A. angustatus – 15
A. c. ciliatus – 18
A. analis – 22

The species with this distribution pattern are adapted to subtropical, moderately dry to moderately wet climate, and apparently they avoid areas that are too wet and that favour the growth of rain forest.

10. **Athertonian**, including north-eastern tropical Queensland as far south as about Mackay, with the centre around the Atherton Tableland:

A. latior – 1
A. apicalis – 1
A. longus tropicus – 3
A. sparsepunctatus – 7
A. kurandae – 7
A. b. bimaculatus – 7
A. languidus – 7
A. nitidior – 8
A. convexicollis- 8
A. gibbosus – 8
A. villosus – 10
A. calvus – 14
A. palumae – 15
A. ciliatus tenuipunctatus – 16
Cainogenion clypeale
Cainogenion parumpilosum

Although most north-eastern species occur on and around the Atherton Tableland, few reach into the Cape York Peninsula further north, or live near the southern border of the tropical area, in the vicinity of Townsville. They are adapted to rather wet to wet tropical conditions. A single species (*A. apicalis*) also reaches eastern New Guinea in environments much alike those of northern Queensland.

11. **Peninsular**, including the Cape York Peninsula:

A. zborowskii – 1
A. bamagae – 4
A. sedlaceki – 7
A. ovatus – 8
A. laticaudatus – 8
A. yorkensis – 8
A. nigricauda – 13
A. luteus – 15
Cryptocephalomorpha australica

As far as can be judged from the limited material, all mentioned species occur only in the Cape York Peninsula, some even right on the most northerly tip. Apparently they do not occur in New Guinea, and they seem to avoid the rain forest areas. They are adapted to tropical monsoonal climate.

12. **Tropical**, including north-eastern Queensland as far south as about Mackay, far Northern Territory south to about Katherine, and Western Australia north of Great Sandy Desert:

A. laevis – 16
A. linearis – 18

These species inhabit the whole wet tropical belt and are very widely spread. They are adapted to tropical monsoonal climate.

13. **Arnhemian**, including the wet tropical northern part of Northern Territory south to about Katherine:

A. katherinei – 2
A. edithae – 3
A. adelaideae – 3
A. flavus – 3
A. rufozonatus – 3
A. rufomarginatus – 3
A. browni – 8
A. latipalpis – 15
A. bacillus – 18

Most species are confined to the extreme north of the Northern Territory or to those parts of Arnhem Land which have been altogether collected (the western fringe). They are adapted to the tropical monsoonal climate.

14. **Kimberleyan**, including Western Australia south to the northern fringe of the Great Sandy Desert (Kimberley Division) and adjacent tropical northwestern Northern Territory:

A. brevipennis – 3
A. elongatulus – 3
A. rufescens – 3
A. multipunctatus – 8

Most species with this distribution pattern also range into the northwestern part of the Northern Territory which is ecologically much alike the northern part of Western Australia. They are adapted to moderately wet tropical monsoonal climate.

15. **Tanamian**, including Western Australia north of the Great Sandy Desert and the western part of central Northern Territory:

Cainogenion interiore

Species with this distribution pattern are adapted to tropical, though semiarid conditions. As far as it is known, in Western Australia the single species occur actually only at the southeastern fringe of the Kimberleys, where the environment changes very rapidly from wet tropical to arid conditions.

16. **Hamersleyan**, including the mountain ranges of the western part of Western Australia between the southern fringe of the Great Sandy Desert and Gascoyne River:

A. grossepunctatus – 15
A. crassus – 15

As the collecting circumstances of both species are unknown, nothing can be said about their ecological preferences. Certainly they are adapted to rather arid conditions.

17. **Canningian**, including central Western Australia between Great Sandy and Gibson Deserts in the north and the Great Victorian Desert in the south:

A. seminitidus – 5
A. houstoni – 15

Species with this distribution pattern are adapted to semiarid conditions.

18. **Southwestern**, including the southwestern part of Western Australia, north to about Geraldton, east to about Israelite Bay, and inland to about Kalgoorlie:

Pseudomorpha subangulata
Pseudomorpha brevis
A. howdenorum – 1
A. sericeus – 1
A. piceus – 3
A. punct. angustemaculatus – 15
A. distinguendus – 15
A. crucis- 15
A. brevior – 16
A. unicolor – 17
A. celeripes – 19
A. g. gyrinoides – 22
A. mainae – 20
Cainogenion ipsoides occidentale
Cainogenion rotundicolle
Cainogenion depressum

Species with this distribution pattern are adapted to warm temperate, but fairly dry climate. Some species occur in the rather dry, inland part of this area that is mainly grown with mallee.

19. **Nullarborean**, including the southwestern part of South Australia and the adjacent southeastern part of Western Australia:

A. ooldeae – 15

Species with this distribution pattern are adapted to warm temperate, semiarid climate.

20. **Central**, including the inland parts of South Australia, New South Wales, Queensland, Northern Territory, and Western Australia:

A. marginicollis – 5
A. laticollis – 15
A. virgatus – 15
A. adustus – 15
A. flavescens – 15
A. cuneatus – 26

Species with this distribution pattern are adapted to warm temperate to tropical, but always semiarid conditions. The distribution of some species is not well known, hence, most are still know from two or three states only, or seem at present to have a more southern or western distribution, respectively.

21. **Macdonnellian**, including central Northern Territory only:

A. coriaceus – 5 *A. brittoni* – 15

These species are also adapted to warm but semiarid climate.

22. **Australian**, including all mainland states with exception of far Northern Territory and Western Australia north of Great Sandy Desert (the Kimberleys), but including central Australia:

A. rubiginosus – 15 *Paussotropus cylindricus*

Very widely distributed species, although the actual distribution of *P. cylindricus* is not well known. They are apparently species with a great tolerance to environmental conditions.

Outside of Australia, the following distribution patterns exist for pseudomorphines:

23. **Papuan**, including most of New Guinea and the adjacent islands, especially the western Solomon island Guadalcanal, but apparently absent from the southeastern part of New Guinea opposite northern Australia:

A. exactor – 6 *A. penelopeae* – 8
A. debitor – 8 *Cryptocephalomorpha papua*

Species with this distribution pattern live under wet tropical conditions, they may be, however, rather montane species.

24. **Oriental**, including at present the area between Malaysia, Vietnam, Bali, Borneo, and the Philippines:

A. jacobsoni – 8 *Cryptocephalomorpha collaris*
Cryptocephalomorpha gavieri *Cryptocephalomorpha maior*

These species live under wet, full tropical conditions. Since nothing is known about collecting circumstances, it is not even settled, whether they avoid rain forest like their Australian relatives.

25. **Ethiopian**, including at present South Africa only:

Cryptocephalomorpha genieri

The single species may be adapted to warm temperate or subtropical, moderately wet conditions.

When the above distribution patterns are transformed to the classical biogeographical regions the following distribution of species and species-groups results (Tab. 15). It must be stressed, however, that neither the distribution patterns of tab. 14 are fully congruent with the biogeographical regions, nor is it possible to define clear borders between the regions, because they overlap or merge extensively at their margins. Therefore including of some species or even some subregions in one or another main region may be disputable, and some species have been actually counted twice under different regions.

In terms of species richness as well as group diversity the Torresion Region is undoubtedly richest, followed by the Bassian Region, the Eyrean Region, and the Southwestern Region. However, when the numbers of species are related to the size of the regions, it will become more evident how poor the Eyrean Region is that actually occupies almost two thirds of Australia. On the other hand, the comparative richness of the Southwestern Region is especially noteable.

Actually more than half of the *Adelotopus* species and about half of all species together occur in the Torresian Region, and some additional species enter it from the south, making it the richest and most diverse region. Within this region the Macphersonian, Capricornian, and Athertonian subregions are especially rich in species and each herein equals even the Southwestern Region. Moreover, the Capricornian and Athertonian subregions are also most diverse in terms of number of species-groups of *Adelotopus* occurring there. The northern (Arnhemian and Kimberleyan) parts of the Torresian

Region are less rich in species and distinctly less diverse which means that few species-groups only, but rather many species live there.

The Southwestern Region is also comparatively rich in species and surprisingly diverse. The Bassian Region is moderately rich and diverse, but especially the Kosciuskoan Subregion is notably rich in species, though most species belong to one species-group of *Adelotopus* only and thus, the diversity is low.

Outside of Australia but few species occur, and it is mainly the genus *Cryptocephalomorpha* that has occupied large parts of the Oriental Region and is most numerous there. For completeness in Tab. 16. the species numbers for the states of Australia and countries outside of Australia are figured which are biogeographically less significant, but give about the same picture.

Tab. 14. Number of taxa of the genera *Adelotopus* (**A**), *Cainogenion* (**C**), *Cryptocephalomorpha* (**Cr**), *Paussotropus* (**P**), *Pseudomorpha* (**Ps**), and of species-groups (**G**) of *Adelotopus* occurring in the faunal subregions of Australia and in other biogeographical regions.

Subregion	Ps	G	A	C	P	Cr	Total
1.	–	1	1	–	–	–	1
2.	–	7	9	3	–	–	12
3.	1	5	13	–	–	–	14
4.	–	2	2	–	–	–	2
5.	1	2	2	3	–	–	6
6.	–	1	2	–	–	–	2
7.	–	4	6	1	–	–	7
8.	–	4	10	1	–	–	11
9.	–	8	11	–	–	–	11
10.	–	8	14	2	–	–	16
11.	–	6	8	–	–	1	9
12.	–	2	2	–	–	–	2
13.	–	5	9	–	–	–	9
14.	–	2	4	–	–	–	4
15.	–	–	–	1	–	–	1
16.	–	1	2	–	–	–	2
17.	–	–	2	2	–	–	2
18.	2	8	11	3	–	–	16
19.	–	1	1	–	–	–	1
20.	–	3	6	–	–	–	6
21.	–	2	2	–	–	–	2
22.	–	1	1	–	1	–	2
23.	–	2	3	–	–	1	4
24.	–	1	1	–	–	3	4
25.	–	–	–	–	–	1	1

Tab. 15. Number of taxa of the genera *Adelotopus* (**A**), *Cainogenion* (**C**), *Cryptocephalomorpha* (**Cr**), *Paussotropus* (**P**), *Pseudomorpha* (**Ps**), and of species-groups (**G**) of *Adelotopus* occurring in the main biogeographical regions of Australia.

Region	Ps	G	A	C	P	Cr	Total
Bassian	1	10	28	3	1	–	33
Southwestern	2	8	13	3	1	–	19
Torresian	–	16	68	4	1	1	74
Eyrean	1	5	17	4	1	–	23

Tab. 16. Number of taxa of the genera *Adelotopus* (**A**), *Cainogenion* (**C**), *Cryptocephalomorpha* (**Cr**), *Paussotropus* (**P**), and *Pseudomorpha* (**Ps**) in the states of Australia and the surrounding countries.

Country	Ps	A	C	P	Cr	Total
SA	–	14	5	1	–	20
Vic	1	29	4	1	–	35
Tas	–	6	–	–	–	6
ACT	–	13	2	–	–	15
NSW	1	41	6	1	–	49
Qld	–	60	7	1	1	69
NT	–	20	1	1	–	22
WA	2	25	4	1	–	32
NG	–	4	–	–	1	5
Solomon I.	–	1	–	–	1	2
Philippine I.	–	–	–	–	1	1
Borneo	–	–	–	–	1	1
Bali	–	–	–	–	1	1
Java	–	1	–	–	1	2
Sumatra	–	–	–	–	1	1
Malaysia	–	1	–	–	1	2
Thailand	–	–	–	–	3	3
Vietnam	–	–	–	–	1	1
South Africa	–	–	–	–	1	1

9.2.3. Distribution patterns of species: phylogenetic correlations

For the later discussion it is important to know the number of plesiotypic or apotypic species having a distinct distribution pattern, or else, in which faunal subregions apotypic species are concentrated, because I think that allopatric (or peripatric) speciation at the borders of previous geographic extensive ranges is the principal means for the development of new species.

1. The **Southern** distribution pattern includes only one *Adelotopus* species that is one of the most plesiotypic species of the genus.

2. The **Southeastern** distribution pattern includes species of different species-groups of *Adelotopus* and some *Cainogenion*, though mainly the most plesiotypic species of the respective groups or subgroups (*A. sinuaticollis, A. politus, A. minor, A. haemorrhoidalis, A. puncticollis, A. dubius, C. ephippiatum*). Only few more apotypic species or representatives of apotypic species-groups occur, but the latter are generally rather plesiotypic representants of these groups (*A. paroensis, A. nemosomoides, C. i. ipsoides*).

3. The **Kosciuskoan** distribution pattern includes surprisingly many species of a single, rather plesiotypic species-group of *Adelotopus* (*gyrinoides*-group) that are generally very closely related. Most species of this group occurring here are rather plesiotypic. Few more apotypic species belong to this distribution pattern (e. g. *A. fasciatus, A. longiformis*) and the most plesiotypic species of *Pseudomorpha* lives here also.

4. The **Tasmanian** distribution pattern includes only two species, a plesiotypic taxon (subspecies) of a rather plesiotypic species-group of *Adelotopus* (*A. dubius hobarti*) and rather apotypic but in its position rather doubtul *A. tasmani* that combines rather plesiotypic with some apotypic character states. Unfortunately, no exact locality record is available of *A. tasmani*, hence the validity of this distribution pattern is somewhat doubtful.

5. The species of the **Murrayan** distribution pattern are a mixture of either rather apotypic (*A. atrorufus, C. creberrimum, C. glabratum*) or fairly plesiotypic species (*A. murrayanus, P. insignis*).

6. The **East Australian** distribution pattern includes only two apotypic species of a rather plesiotypic species-group.

7. The **Eastern coastal** distribution pattern includes mostly species of highly apotypic species-groups of *Adelotopus*, or the most apotypic species of rather plesiotypic species-groups. Only one rather plesiotypic species (*A. ulrichi*) is included.

8. Most species of the **Macphersonian** distribution pattern belong to rather plesiotypic species-groups, but are more or less apotypic within these groups.

9. The **Capricornian** distribution pattern combines species of rather apotypic species-groups and apotypic species of rather plesiotypic groups.

10. The **Athertonian** distribution pattern includes mostly apotypic or highly apotypic species of plesiotypic or moderately plesiotypic groups.

11. The **Peninsular** distribution pattern includes usually highly apotypic species from different species-groups of the genus *Adelotopus*, and additionally the highly apotypic and single known Australian species of *Cryptocephalomorpha*.

12. The **Tropical** distribution pattern is surprisingly low in species and includes highly apotypic species only.

13. The **Arnhemian** distribution pattern includes many species of a single, moderately apotypic species-group of *Adelotopus* (*brevipennis*-group) and additional few apotypic species of other groups. Within the *brevipennis*-group the most plesiotypic species occurs here as well as several apotypic species.

14. The **Kimberleyan** distribution pattern includes only apotypic species of rather apotypic species-groups. Here, like in the Arnhemian, mainly species of the *bravipennis*-group occur.

15. The **Tanamian** distribution pattern includes only a singe, moderately apotypic species of *Cainogenion*.

16. The **Hamersleyan** distribution pattern includes only two apotypic species of a rather apotypic species-group.

17. The **Canningian** distribution pattern includes two apotypic species of two rather apotypic groups.

18. The species of the **Southwestern** distribution pattern are mostly apotypic, even when they belong to plesiotypic species-groups (e. g. *A. howdenorum, A. sericeus*) or they are plesiotypic species with some special features (e. g. *A. celeripes, C. rotundicolle*).

19. The single species of the **Nullarborean** distribution pattern is apotypic and belongs to an apotypic group.

20. Species of the **Central** distribution pattern are generally apotypic and belong to apotypic or highly apotypic species-groups.

21. The two species of the **Macdonnellian** distribution pattern are likewise apotypic and belong to apotypic species-groups.

22. The few widely ranging species are fairly or highly apotypic.

23. The species of the **New Guinean** distribution pattern are rather apotypic species, *A. debitor*, however, is a somewhat enigmatic species combining strikingly plesiotypic and apotypic characters and is not easily arranged.

24. The fauna of the **Oriental** Region is a mixture of fairly plesiotypic to highly apotypic species, but it is at the same time a combination from Aethiopian/Oriental elements and only one Australian element.

25. The single species of the **Ethiopian** Region belongs to an apotypic genus, but is the most plesiotypic species within this genus.

The distribution patterns may be briefly summarized as follows, but this must be done independently for the different genera:

Genus *Adelotopus*. Within almost all plesiotypic or rather plesiotypic species-groups the most plesiotypic species occur in temperate southeastern Australia or at least in the southeastern part of the common range of the respective species-group. Only some apotypic or highly apotypic species-groups that consist of single or few species only do not occur in southeastern Australia (*laevis-*, *maculipennis-*groups), or are confined to the north (*katherinei-*, *nigricauda-*, *linearis*-groups), or the centre (*atrorufus-*, *marginicollis*-groups), or the southwest (*unicolor*-group), or to New Guinea (*exactor*-group). Of the large species-groups only one (*brevipennis*-group) has its most plesiotypic species in the north and has been apparently evolved in northern Australia.

In certain species-groups distinct vicariance patterns exist between southeastern and southwestern taxa (e. g. *A. puncticollis puncticollis – A. puncticollis angustemaculatus, A. ciliatus – A. brevior, A gyrinoides orientalis – A. gyrinoides gyrinoides*), or southeastern and central eastern taxa (e. g. *A. dytiscides – A. ulrichi, A. sinuaticollis sinuaticollis – A. sinuaticollis calliope, A. seripunctatus seriepunctatus – A. seriepunctatus striatus*), or central eastern and northeastern taxa (e. g. *A. longus longus – A. longus tropicus, A. geminus – A. laticaudatus, A. nitidior – A. yorkensis, A. convexus – A. calvus, A. ciliatus ciliatus – A. ciliatus tenuipunctatus*), or northern Australian and New Guinean taxa (e. g. *A. yorkensis – A. debitor*). In all mentioned examples the western or northern vicariant of these pairs is invariably apotypic. For more exact inventory see Tabs 17 and 18.

These patterns are evidence of general gradients towards an increasing grade of apomorphy from temperate southeastern Australia to the north, to the southwest, and also into the dry interior.

Tab. 17. Dichotomous vicariants of Australian and New Guinean Pseudomophinae and their chorological affinities.

Vicariants	Broadly Sympatric	Narrowly Sympatric	Allopatric	Areas
A. dytiscides – A. ulrichi		x		2/7
A. s. sinuaticollis – A. s. calliope			x	2/9
A. p. puncticollis – A. p. angustemaculatus			x	2/18
A. d. dubius – A. d. hobartensis		x		2/4
C. i. ipsoides – C. i. ocidentale			x	2/18
A. s. seriepunctatus – A. s. striatus			x	3/9
A. gyrinoides orientalis – A. g. gyrinoides			x	3/18
C. glabratum – C. depressum			x	5/18
A. foliaceus – A. distinguendus			x	7/18
A. bimaculatus angustior – A. b. bimaculatus	x			8/10
A. convexus – A. calvus			x	8/10
A. l. longus – A. l. tropicus		x(?)		9/10
A. geminus – A. laticaudatus			x	9/11
A. luteus – A. houstoni			x	11/17
A. laticollis – A. cribricollis			x	20/7
A. coriaceus – A. seminitidus			x	21/17
C. papua – C. australica			x	23/11

Tab. 18. Trichotomous vicariants of Australian and New Guinean Pseudomophinae and their chorological affinities.

Vicariants	Broadly Sympatric	Narrowly Sympatric	Allopatric	Areas
C. obscurum – C. subopacum – C. interiore	x		x	2/8/15
P. i. pilosa – P. i. insignis – P. subangulata			x	3/5/18
A. c. ciliatus – A. c. tenuipunct. – A. brevior			x	9/10/18
A. nitidior – A. yorkensis – A. debitor			x	10/11/23
A. virgatus – A. adustus – A. brittoni	x			20/21

Genus *Cainogenion*. This genus shows basically the same pattern with the most plesiotypic species (*C. ephippiatum*) occurring in southeastern Australia and a similar trend towards increasing apomorphy to the north, west, and centre. There are some vicariance patterns (Tab. 17, 18) between taxa occurring in the temperate south and those in the dry interior (*C. creberrimum creberrimum* – *C. creberrimum gnaltae*), or between southeastern and southwestern taxa (*C. ispoides ipsoides* – *C. ipsoides occidentale*, *C. glabratum* – *C. depressum*), or between southeastern and northeastern species (*C. obscurum* – *C. subopacum*), or between eastern Australian and central and western Australian species (*C. obscurum* – *C. interiore*). In most pairs the southern or eastern vicariant is plesiotypic as compared with the northern, inland, or western vicariants, respectively. In one example of eastern-western vicariance (e.g. *C. glabratum* – *C. depressum*), however, the eastern vicariant is perhaps apotypic, though the mentioned species are altogether the most highly evolved species of the genus and character evolution may have been occurred in a reverse direction.

Because in southern WA and northern Qld plesiotypic as well as highly apotypic species live, the gradients of increasing apomorphy are not so simple as they apparently are in *Adelotopus*. But in *Cainogenion*, too, the origin of the genus was in temperate southeastern Australia and the apotypic taxa occur rather in drier environments.

Genus *Paussotropus*. The single species is certainly closely related to *Cainogenion* and stems from a common ancestor that lived most probably in southeastern Australia, where *Cainogenion* apparently originated.

Genus *Pseudomorpha*. In the Australian species of the subgenus *Austropseudomorpha*, there is also an eastern to western gradient of increasing apomorphy and so we can argue that this subgenus originated also in southeastern Australia.

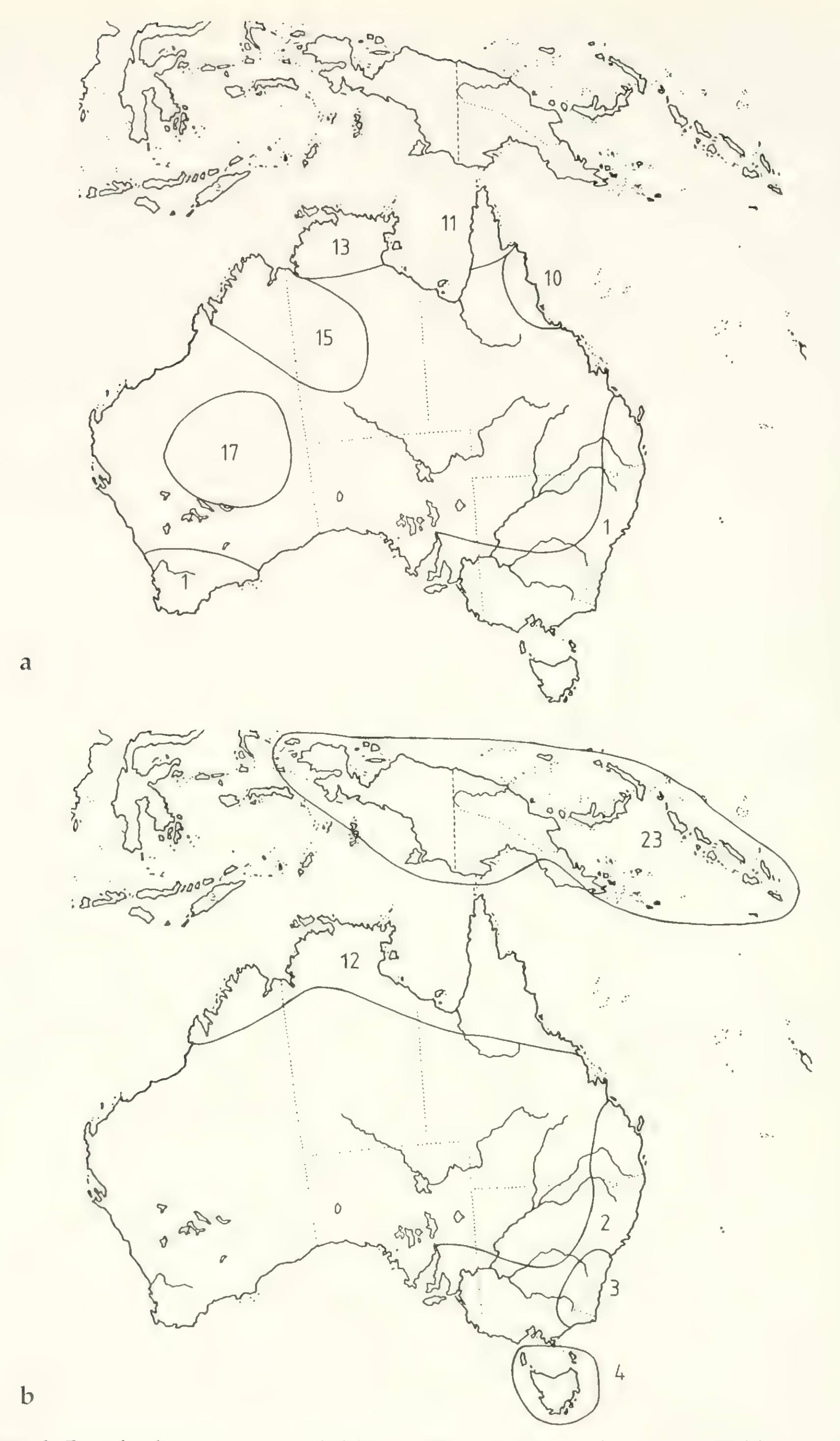
Genus *Cryptocephalomorpha*. This is the single group of pseudomophines present in Australia that is a foreign invader which arrived fairly recently. Actually the Australian species belongs to an apotypic lineage and is in several respects one of the most highly evolved *Cryptocephalomorpha* species. Apparently the genus stems from South Africa (or from that part of a former continuous landmass opposite present South Africa, see below). It immigrated later, but still very early, into the Oriental Region where it evolved further, but reached the Australian Region rather recently . As a consequence, at present it has reached only the Cape York Peninsula in northern Queensland, whereas outside of Australia it distributed over New Guinea and even reached the Solomon Islands.

9.3. Biogeographic subregions, barriers, and their significance for biogeographic history

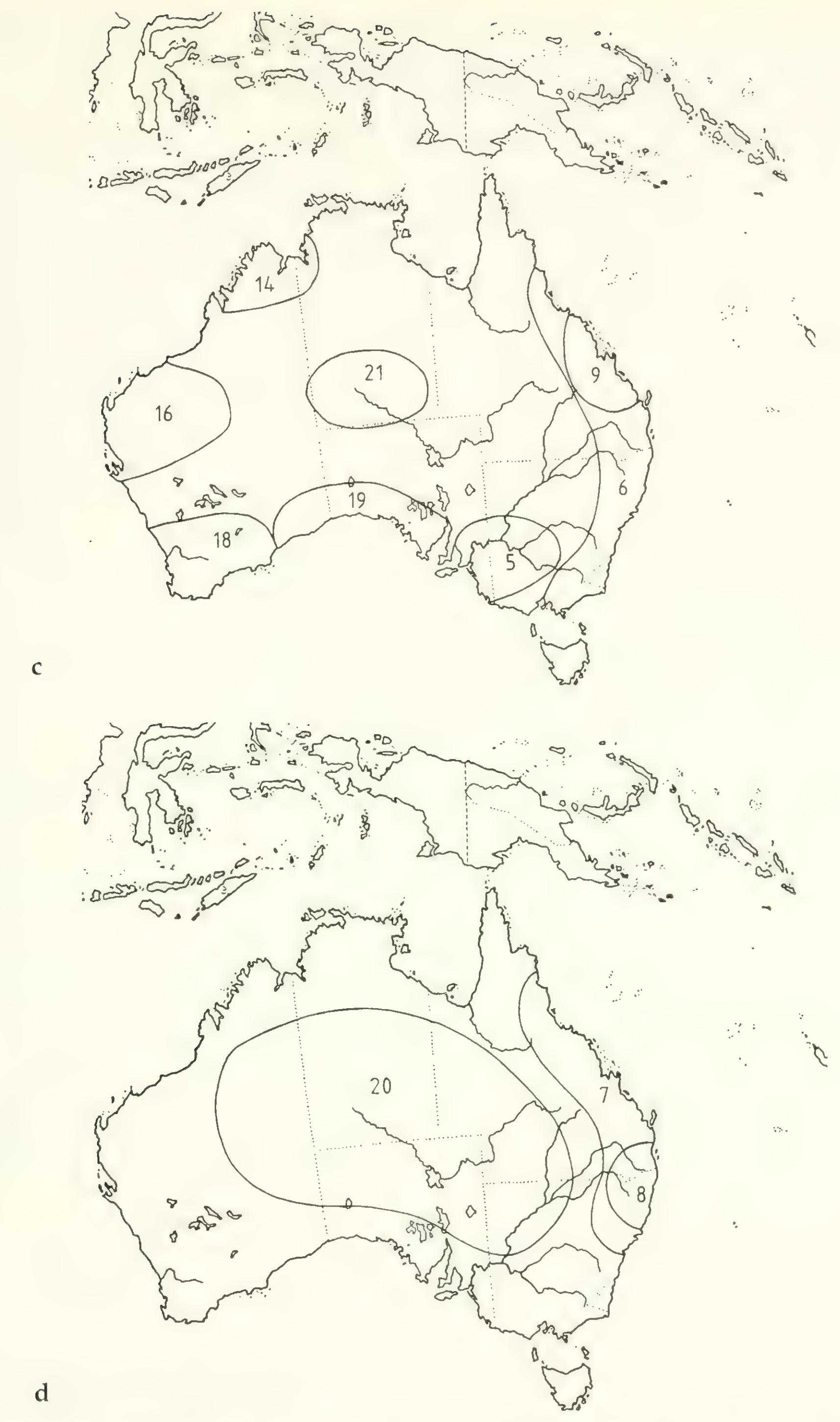
The mentioned distribution patterns are evidence of the development of a number of distinct biogeographic subregions, but the rather large number of vicariants points to previous connections between these subregions and at the same time to present or previous barriers between them. Some main barriers have been known for a rather long time, but many have been elaborated fairly recently and most are apparently significant for many different animal groups (Mackerras 1962, Cracraft 1982, Horton 1984, Watson & Theischinger 1984, Heathwole 1987, Baehr & Baehr 1987, Cranston & Nauman 1991).

Barriers are of very different type and age and may have been significant for long or short periods in the past or the present. Some have been repeatedly opened and closed again, thus acting like a ventil and causing high taxonomic diversity. This implies alternating phases of range expansions and retractions, i.e. dispersal followed by vicariance. The main barriers in the Australian Region are the following:

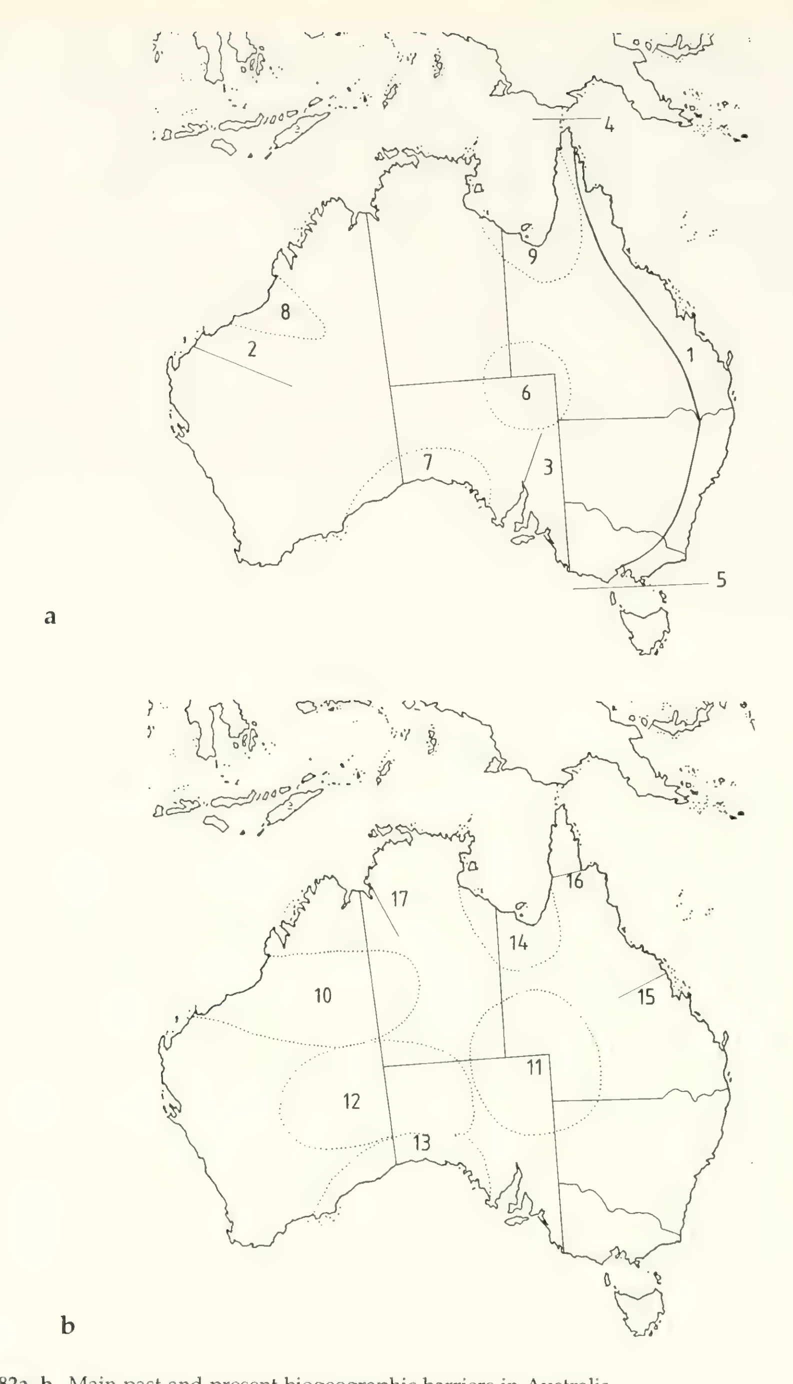
1. Geographical barriers: mountain ranges (Great Dividing Range, Hamersley Range, Flinders Range); marine channels (present Torres and Bass Straits); large inland water bodies (previous Lake Dieri in central Australia); previous epicontinental seas (in present Nullarbour Plain, Great Sandy Desert, and Gulf of Carpentaria).
2. Climatic and edaphic barriers that are usually ecological barriers because of drastic change of vegetation type: deserts (present Great Sandy Desert, Simpson Desert, Great Victoria Desert); climatic or edaphic grass- or shrublands (present plains around Gulf of Carpentaria, Nullarbour Plain); dry or open forest corridors between rain forest or Monsoon forest areas (present and past



Figs 281a-d. Faunal subregions as revealed by distribution patterns of the genera *Adelotopus, Cainogenion, Paussotropus, Pseudomorpha* (subgenus *Austropseudomorpha*), and *Cryptocephalomorpha*. **1.** Southern. **2.** Southeastern. **3.** Kosciuskoan. **4.** Tasmanian. **5.** Murrayan. **6.** East Australian. **7.** Eastern Coastal. **8** Macphersonian.



9. Capricornian. **10.** Athertonian. **11.** Peninsular. **12.** Tropical. **13.** Arnhemian. **14.** Kimberleyan. **15.** Tanamian. **16.** Hamersleyan. **17.** Canningian. **18.** Southwestern. **19.** Nullarborean. **20.** Central. **21.** Macdonnellian. **22.** Australian. 23.Papuan. 24. Oriental. 25 Ethiopian.



Figs 282a, b. Main past and present biogeographic barriers in Australia.
a. Mountain ranges: **1.** Great Dividing Range. **2.** Hamersley Range. **3.** Flinders Range. – Marine channels: **4.** Torres Strait. **5.** Bass Strait. – Past epicontinental seas and large inland lakes. **6.** Lake Dieri. **7.** Nullarbour Plain. **8.** Gulf of Carpentaria. **9.** Great Sandy Desert. Outline of largest expansion dotted.
b. Present climatic and/or edaphic barrieres. **10.** Great Sandy Desert. **11.** Simpson Desert. **12.** Victoria Desert. **13.** Nullarbour Plain. **14.** Plains around the Gulf of Carpentaria. **15.** Dry corridor between Rockhampton and Townsville. **16.** Dry corridor at base of Cape York Peninsula. **17.** Dry corridor between northern NT and WA.

corridors between Rockhampton and Townsville, at base of Cape York Peninsula, between northern parts of Northern Territory and Western Australia).

Generally geographical barriers are also to some extent climatic and vegetation barriers, so distinction is not always clear. Some barriers are active only at present, some were significant only in the past, but most have had a rather long history and their significance to the evolution of life oscillated especially during late Tertiary and Pleistocene. The subregions mentioned for Australian Pseudomorphinae and the principial barriers which separate(d) them are sketched in figs 281 and 282.

Today Australia is apparently in an interglacial or even an interstadial which in Australia has been always a dry period. Hence, barriers between faunal subregions are today of more significance than the connections between them. This has been different during the wet glacials and stadials (pluvials) when the principial migrating routes for arboricolous animals like Pseudomorphinae were perhaps along the Great Dividing Range, across the Nullarbour Plain, and across the grasslands and dry open forests of the Gulf of Carpentaria hinterland and the Northern Territory/Kimberley border, and due to eustatic fall of sea level also across the Bass and Torres Straits.

The varying and repeated influence of presently very important barriers as for example the Nullarbour Plain may be illustrated by the various southeastern-southwestern vicariants which are of rather different taxonomic status. According to distinct specific differentiation of certain pseudomorphines (e. g. *A. ciliatus-A. brevior, C. glabratum-C. depressum, P. insignis-P. subangulata*), to subspecific segregation (in *A. puncticollis, A. gyrinoides, C. ipsoides*), and to no taxonomic differentiation at all (in *A. dytiscides*) the Nullarbour Plain must have been open for arboricolous animals such as pseudomorphines at least three times during Pleistocene (and perhaps late Tertiary). The last period when the Nullarbour Plain did not act as a barrier to pseudomorphines was perhaps even at the end of the last pluvial.

Similar vicariant distributions in other parts of Australia and in Australia-New Guinea can be referred to the changing importance of other geographic or vegetation barriers. It is more difficult, however, to correlate the main taxonomic diversification into species-groups with such events, because this must have occurred more or less early in the Tertiary or even in late Cretaceous.

9.4. Biogeographic history of the subfamily Pseudomorphinae and of the included genera

9.4.1. Introduction

The biogeographic history of the subfamily is difficult to determine mainly for three reasons:

1. The phylogenetic position of the subfamily is not settled, because the adelphotaxon of the subfamily is not yet known.
2. Pseudomophinae are presumably not represented in the fossil record. This is surprising in a mainly corticolous subfamily, but does not help solve the question, where the Pseudomorphinae originated, when they originated and differentiated into the present genera, and therefore no conclusions are possible as to the origin of the subfamily in anyone of the regions where they occur today.
3. The present distribution of the Pseudomorphinae is rather enigmatic, although it simulates a centre of species richness and of diversity in Australia which, however, could be the result of rather recent geographical events or changes of ecological conditions, rather than reflecting the early faunal history or even the origin of the subfamily in Australia.

The recent discoveries of species of the genus *Pseudomorpha* in Australia and of a species of *Cryptocephalomorpha* in South Africa in one way facilitate solving of these questions; in another way, however, they impede the discussion, because the origin of the subfamily and of the present genera is thus considerably dated back in time.

9.4.2. Paleogeological aspects correlated to the origin of the subfamily Pseudomorphinae

The origin and further evolution of Pseudomorphinae and their present genera has been dealt with by me before (Baehr 1992a, 1994a). In view of new records and new evidence according to full character analysis of the genus *Cryptocephalomorpha*, however, some ideas must be revaluated and modified.

According to phylogenetic evidence apparently all genera originated in the southern hemisphere: most in southeastern ("bassian") Australia (*Sphallomorpha*, *Adelotopus*, *Cainogenion*, subgenus *Austropseudomorpha* of *Pseudomorpha*, probably also *Paussotropus*); one subgenus in southern South America (*Pseudomorpha* subgenus *Notopseudomorpha*); one genus in South Africa (*Cryptocephalomorpha*). This is strong evidence that the subfamily as a whole is a Gondwanan faunal element.

If it is correct that Pseudomorphinae are monophyletic, furthermore that *Sphallomorpha* as the most plesiotypic genus is the adelphotaxon of the remaining genera, and finally that *Cryptocephalomorpha* is related to the *Adelotopus-Cainogenion-Pausotropus*-lineage, then there is some reason to believe that the subfamily as a whole originated somewhere in the vicinity of what is at present southeastern Australia. However this idea raises several questions, mainly to the time of origin of the subfamily, the time of separation of the present genera, and the places of origin of the genera.

To illustrate these problems, a short summary of the present ideas about the geographical history of the southern continents is given that refers mainly to Ridd (1971), Shields (1979, 1983), Crook (1981), Powell et. al. (1981), Owen (1983), Keast (1983), Wolfe & Upchurch (1986), Audley-Charles (1987), Truswell et al. (1987), Zinsmeister (1987), Heathwole (1987), Main (1987), Scotese et al. (1988), Veevers et al. (1991), Burrett et al. (1991), Daly et al. (1991), Cranston & Nauman (1991), and De Boer (1995).

According to present knowledge the first breakup of the southern landmass (Gondwanaland) in a western and eastern part began in late Jurassic (c. 155 mio b.p.), when a deep sea trench formed between present South America + Africa in the west and present Antarctica + India + Australia in the east. This seaway which became later the Indian Ocean spread southward and subsequently India began its northward movement. At the same time separation of South America and Africa began from the north through development of a narrow seaway, the later South Atlantic, and subsequently Africa drifted likewise northward with a certain amount of rotation. Although South America, Antarctica, and Autralia formed a contiguous landmass until late Cretaceous, separation of Australia had already commenced in the late Jurassic by the development of a deep seaway in a west to east direction between Antarctica and the western part of Australia. Hence, South America, Antarctica, and Australia certainly did not form a compact block during Cretaceous, because the geologic history of the connection of South America with western Antartica was rather complex and Antarctica itself was apparently crossed by a seaway. The significance of barriers between the three continents at that time is unclear, but may have been underestimated.

Complete segregation of Australia from Antarctica occurred not before early Tertiary, when the seaway between the Indian and Pacific Oceans was completed. However, a land bridge between Southern Australia and Antarctica across the Southern Ocean could have been existed until c. 40 mio b.p. Since its separation from Antarctica, Australia drifted steadily northwards, until it came in contact with the south Asian insular belt in mid Miocene (c. 15 mio b.p. or somewhat later). However, there is some reason to believe that the isolation of Australia has not been as intense as was believed for some time, because certain parts (terranes) of the former Gondwanaland drifted in the same direction northward and at times might have been situated rather close to Australia. Especially the terranes of the so called "Sundaland" (present Malaysia, southern Thailand and Burma, and the Greater Sunda Islands) were originally situated near Australia and drifted away from Gondwanaland during Jurassic. Probably they have been always situated more or less closely to the western or northwestern corner of Australia. Moreover, some islands north to Australia, in particular Timor, Ceram and eastern Sulawesi (as well as New Guinea), have been always part of the Australian plate. So, during Createaceous and early Tertiary, Australia was loosely connected with mainland Asia by certain terranes of Gondwanan origin, even when no land connection existed.

9.4.3. Time of origin of Pseudomorphinae and the included genera

Provided that Pseudomorphinae are monophyletic, and due to further phylogenetic evidence explained in the foregoing chapters, the origin of the subfamily must be dated back to at least Upper Jurassic (c. 150 mio b.p.), because paleogeographical evidence shows that at this time Africa and India began to separate from Gondwanaland. Evidently, however, not only Pseudomorphinae as a whole must have been evolved before that event, but also at least the *Sphallomorpha-*, *Pseudomorpha-* and – most important – the *Cryptocephalomorpha*-lineages must have been already present. The latter is particularly surprising, because *Cryptocephalomorpha* is in certain respects the most specialized genus

of the subfamily. However, as it is presumably the adelphotaxon of the *Adelotopus-Cainogenion-Paussotropus*-lineage, it must be quite old.

According to its high grade of specialization and its isolated systematic position, Pseudomorphinae is certainly an old subfamily, but evolution of a highly specialized subfamily of Carabidae and even of its major lineages at least as early as mid Jurassic certainly means a rather audacious backdating of the main differentiation of the whole family Carabidae.

When the *Sphallomorpha-*, *Pseudomorpha-*, and *Cryptocephalomorpha*-lineages were present already in Upper Jurassic, development of the *Adelotopus*-lineage occured perhaps not much later, or, more probably, was also completed at this time, because there is a considerably amount of evolutionary change within the genus *Adelotopus*, and the most plesiotypic species are structurally rather similar to those of both other plesiotypic genera. Only *Cainogenion* and *Paussotropus* could have been evolved some time later without our knowing of the exact time.

9.4.4. Place of origin of Pseudomorphinae and of the included genera

Due to subsequent southward movement of Antarctica during Tertiary little is known about its environments during late Mesozoic and early Tertiary and, moreover, almost no remnants are left or they are not accessible at present under the ice cover. So we do not know whether Pseudomorphinae were widely distributed over Antarctica during the period when the southern continents were still connected, nor whether they found suitable environments and where these were located, nor which geographical or ecological barriers were existent and during which periods they were effective. On the other hand, we likewise do not know the habits of the earliest pseudomorphines nor of the ancestral stocks of the present genera. So, reconstruction of their original ecological requirements is very difficult. But without this knowledge we cannot reconstruct the early evolution of Pseudomorphinae, nor have we an idea of the nature of the environments suitable to early pseudomorphines. As a conclusion, the crucial question is, whether Pseudomorphinae originated in what is now Antarctica and if so, in which part of Antarctica this happened. Although the most plesiotypic members of all genera are arranged in a concentric circle around present Antarctica, this large landmass is a completely blank mark with regard to the question of the origin of Pseudomorphinae. This is especially unfortunate, because the centre of origin was likely located in the area now recognized as Antarctica. To conclude, localisation of the place of origin of Pseudomorphinae it is at present not objectively possible, though southeastern Australia or the adjacent part of Antarctica should be favorite according to phylogenetic and chorological evidence.

Under the proviso mentioned above we can argue that at least the genera *Sphallomorpha*, *Adelotopus*, *Cainogenion*, and *Psussotropus* evolved without doubt in southeastern Australia or adjacent Antarctica. *Pseudomorpha* seemingly evolved in southern South America or in the adjacent part of Antarctica, but this is not fully settled with regard to the occurrence of a rather basally branching though highly specialized subgenus in Australia. In *Cryptocephalomorpha* the situation is different. According to present evidence the genus originated in southern Africa or the adjacent part of Gondwanaland.

9.4.5. Ecological requirements of ancestral Pseudomorphinae

As mentioned above, we do not know the habits of ancestral Pseudomorphinae. When yet discussing this question, I know that the conditions for that are rather poor, because we do not even know enough about the habits of the present pseudomorphines. As prerequistes for this question there is 1. the (limited) knowledge about the habits of the present species which is quite different in the genera, and 2. some ideas as to evolutionary trends within the different genera which we can interpret as adaptations to certain habits.

Of the present genera, *Sphallomorpha*, *Pseudomorpha*, *Adelotopus*, and *Cainogenion* live under bark of trees and all species are perhaps more or less myrmecophilous. In *Pseudomorpha*, however, the subcorticolous habits do not seem so well formed as in *Sphallomorpha*, *Adelotopus*, and *Cainogenion*. Moreover, nothing is known in this respects of the peculiar Australian species of *Pseudomorpha*. There are also no collecting notes about *Paussotropus cylindricus*, hence I am not sure where it lives. The same

is true for *Cryptocephalomorpha*, of which most dated specimens have been captured at light. There is only a single more specified collecting note from David Kavanaugh (personal communication) who in Papua New Guinea collected two specimens of *C. papua* by treading "in Nypa palm litter by ants". So I suspect that *Cryptocephalomorpha* does not live under bark but rather in the leaf litter, but is at the same time myrmecophilous.

The crucial point is, whether the common ancestor of Pseudomorphinae was already an arboricolous, perhaps even subcorticolous animal, moreover, whether it was already myrmecophilous. At the time of origin of Pseudomorphinae conifers were common, but the evolution of eucalypts on which the present Australian species almost completely rely, occurred considerably later in early Tertiary (Beadle 1981, Martin 1981, Pryor & Johnson 1981). So it is conveivable that Pseudomorphinae have been originally tree-living and the American *Pseudomorpha* may have preserved the original habits on conifers, whereas the Australian Pseudomorphinae, even those of the most plesiotypic genus *Sphallomorpha*, must have undergone an ecological shift to pass over to the evolving eucalypts. This shift, however, could have occurred not much before late Eocene or early Oligocene when the sclerophyllous vegetation began to spread over Australia (Johnson 1972, Gill 1975, Beard 1977, Johnson & Briggs 1981).

The above evidence combined, we can argue in two different ways with respect to the apparent non-arboricolous habits of *Cryptocephalomorpha*: 1. *Cryptocephalomorpha* could have preserved the original habits of Pseudomorphinae as litter inhabiting beetles that have developed the myrmecophilous habits more or less independently of the other genera, whereas these adopted the high grade of myrmecophily later after having firstly evolved their subcorticolous habits. If so, the tree-living habits of the other genera would have been a later event, after separation of *Cryptocephalomorpha*. This would imply an independent evolution of *Cryptocephalomorpha* and the rather large number of similarities of this genus with the *Adelotopus*-lineage would have been caused by convergence rather than by close relationships. On the other hand, it could explain the apparently different place of origin of *Cryptocephalomorpha* in South Africa or central Gondwanaland. 2. *Cryptocephalomorpha* could have secondarily lost the subcorticolous habits and at the same time many of the adaptations to this mode of life. This would well explain the high grade of specialization of this genus. In that case we must argue that Pseudomorphinae as a whole were orginally arboricolous animals. In view of the many similarities between *Cryptocephalomorpha* and the *Adelotopus*-lineage I favor the second explanation.

9.4.6. Biogeographical history of the genera of Pseudomorphinae

The analysis of the further biogeographical history of the Pseudomorphinae is somewhat hampered by the limited knowledge about their early history. It is possible, however, to outline the later history and diversification of the different genera according to phylogenetic and chorological evidence.

9.4.6.1. Genus *Sphallomorpha*

The history of the genus *Sphallomorpha* has been outlined in the 1st part of this revision (Baehr 1992a). This analysis is still appropriate with regard to the diversification and spreading of the genus in Australia. According to new evidence, however, the origin of the genus must be dated far back into the Mesozoic and the question arises, what sorts of ecosystem *Sphallomorpha* inhabited, before eucalypts evolved and/or spread throughout Australia.

Certainly, however, in this genus adaptations to the arboricolous life are still prevalent over those to the myrmecophilous life and hence, eucalypts and their history may have played a more important role in *Sphallomorpha*, or at least in the early history of this genus, than ants and their influence.

9.4.6.2. Genus *Pseudomorpha*

The biogeographic history of the genus *Pseudomorpha* is rather difficult to trace, because no phylogenetic analysis of the American species is available. Basic data are: 1. the most plesiotypic species of the genus live in the southern part of South America; 2. the Australian species form a basally

branching offshoot that has developed more apomorphic characteristics than even the most apotypic American species.

Although the genus presumably originated in South America or the former western part of Gondwanaland, this is not fully settled because of the basally plesiotypic state of the Australian species. In America, where the bulk of the known species live, some further evolution took place and at the same time the genus spread to Central America, the West Indies, and the southwestern part of North America. In Australia the subgenus *Austropseudomorpha* is still restricted to the southern part, but it originated most probably in southeastern Australia or invaded this part from the south and later spread across the present Nullarbour Plain to southwestern Australia. This spreading occurred perhaps in two separate waves, with the development of *P. brevis* the older, and that of *P. subangulata* the younger event. The latter might have occurred as late as in the last glacial. The history of the Australian *Pseudomorpha* before these events is unknown, though according to the old age of the whole genus, the paleogeographic events, and the high grade of specialisation of the Australian species, their history in Australia must be old and date back at least into late Cretaceous.

Why the genus in Australia passed through more intense character transformation, but through far less taxonomic radiation than in the Americas, is obscure. One explanation could be the existence of other, competing genera of Pseudomorphinae with their many species in Australia. Perhaps better knowledge of the way of life of both, the Australian and the American species will explain this curious pattern of evolution.

9.4.6.3. Genus *Adelotopus*

Generally the history of the genus *Adelotopus* is rather similar to that of the older genus *Sphallomorpha*. The main similarities are the following: both are large, diverse genera with rather recent specific diversification; their origin was most probably in southeastern Australia or the adjacent part of Antarctica; both genera were perhaps primarily arboricolous and have preserved many adaptations to this life style; there has been a large amount of evolution within both genera; many species are rather locally distributed and occur in faunal refugia, where they have been presumably trapped and forced to rapid evolution by the rapidly changing climatic and ecologic conditions during Pleistocene (Galloway & Kemp 1981, Kemp 1981, Kershaw 1981).

There are, however, some striking differences between the two genera that are evidence for a somewhat different history of each. Certainly *Adelotopus* is the younger and more highly evolved genus. Apart from the ladistic analysis, the main reasons for this opinion are the markedly reduced chetotaxy; the shift of the head to an orthognathous position; the highly apotypic shape of the female stylomeres; the larviparous parturation; the more specialized larvae that are much more adapted to the life with ants; the more extensive evolution within the genus that is more directed towards adaptations to myrmecophilous life. Thus, *Adelotopus* was from the first more closely dependent on ants and moreover achieved an even closer adaptation to myrmecophilous habits during its evolution than *Sphallomorpha* that better preserved the original adaptions to the subcorticolous life. Taxonomic evidence shows that the process of speciation and diversification in *Adelotopus* commenced later than in *Sphallomorpha*, and it may well be continuing within most species-groups. Provided that in *Adelotopus* about the same periods have been required for the development of new species as was estimated for other carabid groups (Freitag 1979, Ball 1985, Noonan 1985, Freitag & Barnes 1989), most species, especially those of relatively close relationships, should have evolved during Pleistocene and, according to the very close relationships of several species swarms or superspecies, even in late Pleistocene. The reasons for that were presumably similar as in *Sphallomorpha*, namely the repeated successions of wet glacials (pluvials) and dry interglacials and additional, less distinctive stadials and interstadials (Galloway & Kemp 1981) that in pluvials enabled wet belts favouring rich tree growth to spread over areas today almost devoid of trees, and in the interpluvials forced these wet belts and their large forests or savannah-like woodlands back again (Kershaw 1981). The repeatedly changing environments and opening and closing of certain of the more important barriers enabled arboricolous animals like Pseudomorphinae to spread over wide distances and to reach regions that became faunal refugia during the dry interpluvials. In certain regions now recognized as faunal refugia (e. g. Arnhem Land, Kimberley Division, Hamersley Ranges, southwestern Australia, some regions in central and central Western Australia, and even some areas in central eastern and northeastern Queensland),

populations became eventually isolated and afterward they passed through a period of rapid evolution, as their environment changed due to increasing drought. Evidently this resulted in the development of several northern or western vicariants to eastern or southeastern taxa in these refugia. Repeated range spreading and isolation may alone account for the diversification of species. However, as the *Adelotopus* species are still highly dependent on eucalypts, perhaps they were influenced also by the history of eucalypts in the same way as the genus *Sphallomorpha* as explained in Baehr (1992a, p. 386).

In northern, central eastern, and southeastern Queensland a similar process took place, but varying from the northern and western refugia here speciation occurred most probably during the wet periods of Pleistocene, when rain forests were far more extensive, whereas the open eucalypt forests and woodlands were more restricted than today and formed island-like pockets. Then eucalypts (and Pseudomorphinae) were restricted to small, isolated patches of eucalypt forests, where evolution of new species took place. The mentioned areas have today a significant, high proportion of endemic species confined to rather restricted areas or even to single tablelands. Moreover, there are several specific or subspecific vicariants occurring in southeastern and northeastern Queensland, or in southeastern Australia and central eastern Queensland, or in central eastern and northeastern Queensland, respectively, that clearly reveal the mentioned process of speciation.

Temperate southeastern Australia, on the other hand, was certainly less influenced by the changing climatic and floral conditions during the Pleistocene, at least as they have been important to the evolution of Pseudomorphinae. Due to the more constant conditions in this part of Australia Pseudomorphinae were perhaps not pushed as much as in other regions to more rapid evolution, and consequently the species diversity is less high and many plesiotypic species were able to survive.

The montane area from eastern Victoria through southeastern New South Wales north to the Australian Capital Territory, however, deviates from this rule, at least with respect to the genus *Adelotopus*. In this area the number of mostly closely related species is rather high, although the morphological diversity is rather low. I think that the high number of related species has been evolved during late Pleistocene, when this region was more influenced by drastic changes of climatic and vegetation belts than the lowlands of southeastern Australia.

According to the high grade of adaptation of *Adelotopus* to the myrmecophilous habits in general and in particular in the more apotypic species, the influence of ants on the evolution within the genus should not be underestimated, although the amount is at present obscure. However, ants could play an equally important role for the history of this and other Australian genera of Pseudomorphinae as eucalypts, because they were equally influenced by the change to drier environmental conditions since mid-Tertiary. Unfortunately, we have extremely little knowledge about the influence of ants and their history on the evolution and history of Pseudomorphinae. As mentioned before, a lot more pseudomorphine larvae of several genera are known in the meantime, but their habits are still barely known and we do not even know whether the larvae of all species live with ants.

9.4.6.4. Genera *Cainogenion* and *Paussotropus*

Both genera are the most apotypic of extant Pseudomorphinae and markedly adaptated to the myrmecophilous habits, whereas the adaptations to the subcorticolous life are less striking and have been lost to a certain degree. Even so, both genera (supposingly *Pausstropus*, too, although this is not yet settled) live still under *Eucalyptus* bark.

The evolution of both genera occurred in southeastern Australia, where the most plesiotypic species of *Cainogenion* still persists, but other species of this genus and the unique *Paussotropus cylindricus* spread over most of Australia. In *Cainogenion* this spreading occurred presumably in different waves and certainly the refugia of north Queensland and southwestern Australia have been colonized at least three times by the *C. clypeale*, *C. parumpilosum*, and *C. tropicum* stocks in north Queensland, and the *C. rotundicolle*, *C. depressum*, and *C. ipsoides occidentale* stocks in southwestern Australia. Whereas the species from northern Queensland do not possess clear vicariants, two of the southwestern taxa have their closely related vicariants in southeastern Australia. Perhaps the colonizations by *C. depressum* and *C. ipsoides occidentale* have been rather recent or very recent events. The colonization by the latter subspecies occurred perhaps even in the last glacial-age stadial.

It is puzzling that both closely related genera had such different histories: whereas in *Cainogenion* several species have been evolved, each of which has a fairly restricted area, *Paussotropus* did not experience any speciation, but the single species is very widely distributed through almost all of Australia. It remains to explain, whether the different patterns of distribution are caused by different habits or adaptations to certain environments.

9.4.6.5. Genus *Cryptocephalomorpha*

As mentioned above, *Cryptocephalomorpha* originated probably in what is now South Africa or in that part of later Antarctica adjacent to Africa. Here still the most plesiotypic species of the genus persists that has preserved certain primitive character states, but posesses all the highly apotypic features of the genus *Cryptocephalomorpha*. A slightly more apotypic species (*C. gaverei*) lives in Southern Asia and almost exactly in that part which previously formed the so-called Sundaland (Malaysia, Thailand, Greater Sunda Islands). Both other Asiatic species of *Cryptocephalomorpha*, however, have much more restricted ranges, as far as it is presently known. Hence we can argue that a still rather plesiotypic stock of *Cryptocephalomorpha* apparently reached Asia drifting with the Sundaland terrane(s) from previous central Gondwanaland. This would be the classical Noah's Ark dispersal described by McKenna (1973). In Sundaland a further diversification took place and two highly evolved species-groups formed, one staying in southeast Asia, the other spreading subsequently to the Australian Region. Even in Asia the first group did not cross far the borders of the former Sundaland to the east, whereas the second group invaded the Australian region and especially mainland Australia from the north. So in Australia *Cryptocephalomorpha* is a recent invader that came over the New Guinean-Cape York Peninsula bridge to northern Queensland. Although we do not know, when this invasion took place, it may have been even as late as late Pleistocene, because the New Guinean sister-species *C. papua* is still very closely related to the Australian *C. australica* and the latter did not spread more southerly than the lower Cape York Peninsula.

Although this scenario corresponds well with the phylogenetic relations and the recent distribution pattern of the species, a different scenario is imaginable that would make unneccessary to postulate a pre-Cretacious origin of *Cryptocephalomorpha* and thus, of Pseudomorphinae as a whole. However, it would imply some additional hypotheses. In this scenario the ancestral stock of *Cryptocephalomorpha* would have originated in Australia or adjacent parts of the former Gondwanaland, perhaps in Late Cretacious time, then spread westwards by dispersal, died out in Australia but survived in the Sunda Islands and in South Africa. More recently, a rather modern stock of the genus would have dispersed back into the Australian Region.

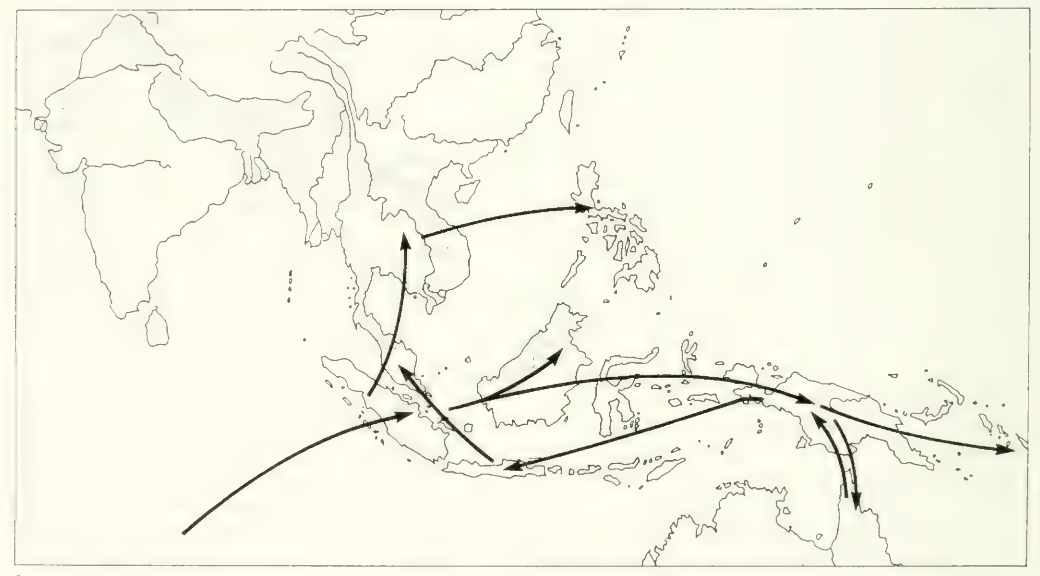
This scenario would be supported by the opinion of myrmecologists that ants originated not before the Cretacious (Hölldobler & Wilson 1990). If this opinion is correct, the postulated ant-pseudomorphine coevolution could not be older than Late Cretacious. However, in view of the phylogenetic and chorological evidence mentioned above, the time of origin of ants perhaps should be reconsidered in the light of the pseudomorphine evidence.

No matter which scenario will prove true, evidently *C. australica* is one of the still very rare examples where an old Gondwanan faunal element recently invaded Australia from the Oriental region on exactly the same route that the many young Oriental faunal elements did on their way to Australia (Darlington 1961, Kikkawa et al. 1981, Baehr 1991, 1992b). Certainly this pattern complicates reasoning about the structure of the Australian fauna, because it adds to the Old (subtropical-tropical) Gondwanan element, the Young (temperate) Gondwanan element, and the Oriental (northern) element (Mackerras 1970, Howden 1981, Keast 1981, Baehr 1991) an additional old Gondwanan element that recently immigrated from the north.

This may be a rather uncommon distribution pattern, but similar thougths were for example expressed by Jocqué (1993) who called a comparable biogeographic pattern in the spider family Zodariidae "We'll meet again", and by Zwick (1977, 1981) who found comparable dispersal routes in certain Blephariceridae (Diptera). But even in carabids a similar pattern was found in the leleupidiine genus *Colasidia* (Baehr in press). Probably that genus likewise arrived in Asia drifting on terranes of Sundaland, subsequently diversified in the area of southern Malaysia and the Greater Sunda Islands, spread into the Australian region, and eventually immigrated into northern Queensland, where the presumably most evolved species of the whole genus is found. As in *Cryptocephalomorpha*, the most



a



b

Figs 283a, b. Main dispersal routes of Pseudomorphinae. **a.** Within Australia. **b.** To and from the Australian Region.

plesiotypic species of *Colasidia* in the Oriental-Australian area still occur in Malaysia and the most apotypic species in northern Australia.

The postulated dispersal routes of Pseudomorphinae within Australia and to and from the Australian Region are depicted in figs 283a and b.

9.5. Outview to the future biogeographical history of the Australian Pseudomorphinae

As mentioned before (Baehr 1991), the precinctive biota in Australia are presently in a period of rapid changes, because this continent still suffers from the disruption of its long isolation by the contact established to southern Asia in Miocene, when a wealth of northern plants and animals of Oriental origin invaded Australia from the north and subsequently spread over the continent. This spreading took place generally in two directions: southeasterly, along the humid east coast, and to the west and southwest across the wet tropical belt and further south through Western Australia (Darlington 1961, Kikkawa et al. 1981, Baehr 1992b). This invasion is by no means finished, since stocks still appear in north Queensland, and the spreading of the northern flora and fauna through Australia is also continued. However, this immigration was rather decelerated or even stopped at the mentioned barriers that are generally areas being ecologically unfavourable to the (mostly) mesophilous or even rather hygrophilous northern species most of which were not able to cross the extensive arid belts in the centre and the west to invade areas being certainly favourable to them, as for example southwestern Australia. Here, predominantly ecological factors (climatic and vegetation barriers) prevented so far the further spreading of the fauna.

Since most genera of Pseudomorphinae are old indigenous faunal components of Australia, it is to be asked whether the spreading of northern faunal elements influenced the past or present distribution of these pseudomorphine genera, e.g. by competition. Because almost no northern arboricolous species were able to invade the open eucalypt forests of Australia (Baehr 1990), I think, it did not influence directly, but at most indirectly as far as the distribution of eucalypts has been or is being influenced by the invasion of northern floral elements. In this connexion also ants and their potential impact to Pseudomorphinae are missing, though this impact should be kept in mind.

Other possible limiting factors to past or further evolution and range spreading of Australian Pseudomorphinae could have been the following:

1. Specialization of pseudomorphine species to certain tree species or related groups of species with distinct features.
2. Specialization of pseudomorphine species to certain ant species, or related groups of species, or genera with distinct ecology.
3. Competition with other arboricolous (subcorticolous) Carabidae.
4. Competition with other pseudomorphine species.

Virtually nothing is known about any possible specialization of pseudomorphine species to distinct tree species, but seemingly in Australia pseudomorphine beetles occur almost invariably on eucalypts and related tree genera with a certain suitable bark structure, especially those of the "gum"-, "box"-, and "stringybark"-groups that all possess a rather loose bark that sheds annually and provides the subcorticolous fauna with many smaller or larger crevices. The low density of the pseudomorphine population in the Cape York Peninsula for example may be mainly caused by the absence of such suitable eucalypt species in large parts of the peninsula, because it is extensively grown with eucalypt species of the so-called "ironbark"- and "blackbutt"-groups unsuitable for any subcorticolous fauna. Even less is known about any possible specialization of pseudomorphine species to distinct ant species, or species-groups, or genera, although due to more intensive specialization to myrmecophilous habits in the genera *Adelotopus*, *Cainogenion*, and *Paussotropus* such specialization would be at least more probably than specialization to distinct tree species. However, the list of proved pseudomorphine-ant relations (see above) enumerates rather few ant genera, but, on the other hand, demonstrates that certain pseudomorphine species have been found by different ant species of even different families. Nevertheless, although the knowledge about pseudomorphine-ant relations is extremely unsatisfactory, I want to stress that ants of the genus *Camponotus* have been so far noted only as hosts of very plesiotypic *Adelotopus* species of the *dytiscides*- and *celeripes*-groups, and in South America also of the most plesiotypic species of the genus *Pseudomorpha* (Lenko 1972). This might be of some importance for future thoughts about development of myrmecophily in Pseudomorphinae in general. It should be further stressed that very few observations of *Sphallomorpha* species occurring with ants are available, and these concern exclusively species of the highly evolved *albopicta*- and *nitiduloides*-groups of the former genus *Sphallomorpha* s. str. This could mean that myrmecophilous habits have been yet increasingly developed within the genus *Sphallomorpha*. In spite of the generally rather unsatisfactory knowledge, in the available records *Cainogenion* species have been mostly found with

ants of the genus *Crematogaster*, but this ant genus has been not yet recorded as host of any *Adelotopus* species. This might be also of some importance for future investigations of pseudomorphine-ant relations.

In Australia, many other carabid beetles, mainly certain Psydrinae, Tetragonoderinae, Helluoninae, and Lebiinae, use eucalypt bark as shelter and are likewise depending on the presence of eucalypts. For further discussion and enumeration of genera see Baehr (1990). Actually, in Australia perhaps almost 600 carabid species (including Pseudomorphinae) live regularly under *Eucalyptus* bark which is more than a quarter of the known carabid fauna. Under such circumstances interspecific competition with other carabid species may also play a major role for evolution and distribution of the pseudomorphines, the more, as the number of species (and specimens) living together in the same area or even on the same tree may be surprisingly large. One sample made by me on two large River Gums in northwestern Australia (Baehr 1990) yielded 11 carabid species with altogether 110 specimens, including 5 *Sphallomorpha* species with some 75 specimens, up to about 2.20 m heigth on the trunks. The different species must be specialized to some extent with regard to certain ecological factors, especially food preferences of imagines (and larvae!). However, our knowledge on way of life, but even on taxonomy of the Australian bark-inhabiting carabids is so limited, that virtually nothing can be said on this problem. Perhaps the adaptation to myrmecophilous habits is a means to escape from such competition.

Although many pseudomorphine species have rather restricted ranges, commonly several species of the same or of different genera occur in the same area or even on the same tree, some even in mixed colonies or in very large numbers (Baehr 1992a). Hence there may be also some competition of different pseudomorphine species. Again our knowledge about the habits of the different species is so limited that this question must be left untouched.

As a conclusion I think that the evolution and diversification of the Pseudomorphinae in Australia is in a phase of vivid development, especially in the genus *Adelotopus*, but probably also in *Sphallomorpha*. Main trends are towards further adaptations to myrmecophilous habits and towards further taxonomic diversification. At present this evolution is not endangered by the competition from younger Oriental faunal elements, which is the case in other indigenous faunal elements.

Provided that we stay at present in a rather transient interstadial, the evolution of pseudomorphines will be further accelerated by the rapid changing climatic and vegetation conditions and the breakdown of present barriers at the beginning of a new pluvial. At long date, however, pseudomorphines in Australia will perhaps decline, provided the slow movement of the Australian plate to the north continues. Then Australia will eventually experience a fully tropical climate and rain forests will presumably spread over large parts of the continent. As a consequence, even more Oriental floral and faunal elements will invade Australia and the competition from these will increase. It is doubtful, whether pseudomorphines will be able to adapt to such conditions, because they were apparently not able to adapt to the rain forest habitat during the whole Tertiary and the late Mesozoic.

10. Open Questions

Several taxonomic, phylogenetic, and biogeographic questions, open for different reasons, may be solved by future collecting and revisionary work. In some genera treated in the present 2nd part of the revision actually more questions are open than in the already revised genus *Sphallomorpha*. The manifold reasons, why this is so, have been dealt with above.

1. The definitive taxonomic status of several closely related taxa especially in the genus *Adelotopus* perhaps will be resolved by better understanding of the real relationships using cytogenetic or population genetic methods. Here, morphological taxonomy has perhaps reached its limits.

2. The systematic position of those species (and monobasic species-groups) known only from one sex, will be better fixed when both sexes are at hand.

3. Careful future collecting work will allow better definition of the ranges of many species hitherto known only from single or few specimens or localities. This will have as well impact on taxonomic problems, in particular on the question of subspecific relations, as on biogeographical problems.

4. Collecting in remote areas of far northern, western, and central Australia, and in New Guinea will certainly result in the discovery of species unknown at present. This could change some preliminary ideas about species richness and diversity and hence about biogeographic questions.

5. The present postulates of phylogeny and biogeography will change on the basis of better knowledge of the actual ranges, of new material of known as well as of undescribed species, of better knowledge of the larvae, but also in view of new evidence using new characters and new methods, or by reexamination or revaluation of characters.

6. Better knowledge of the habits will improve understanding of phylogenetic relations as well as of certain yet unsolved biogeographical questions. At present not even the simplest knowledge of the habits of some genera (*Paussotropus, Cryptocephalomorpha,* Australian *Pseudomorpha*) is available.

7. Biogeographical evidence will be influenced by increasing knowledge of interdependence of Pseudomorphinae with eucalypts and ants, respectively, a subject barely treated before. Indeed, possible preferences to certain tree and/or ant species are completely obscure.

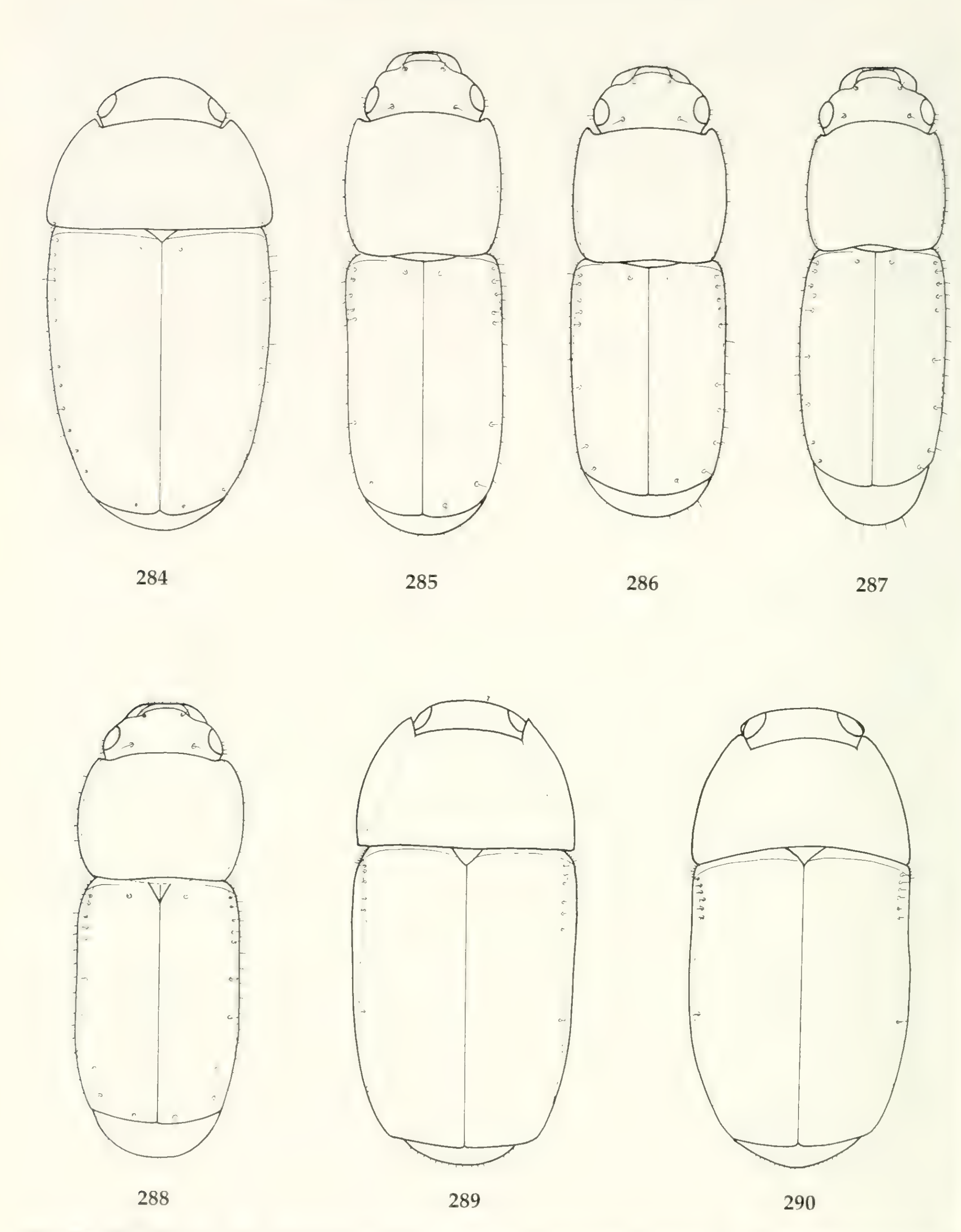
8. Understanding of the innidation and competition of the various bark-inhabiting Australian carabids perhaps will also throw light on the evolution of the pseudomorphine beetles and on their biogeographic history.

9. Further careful collecting may show, whether the many species known from old records only – even those occurring in easily accessible and generally well collected areas in the east – are already extinct. This would draw attention to possible destruction of their original habitats.

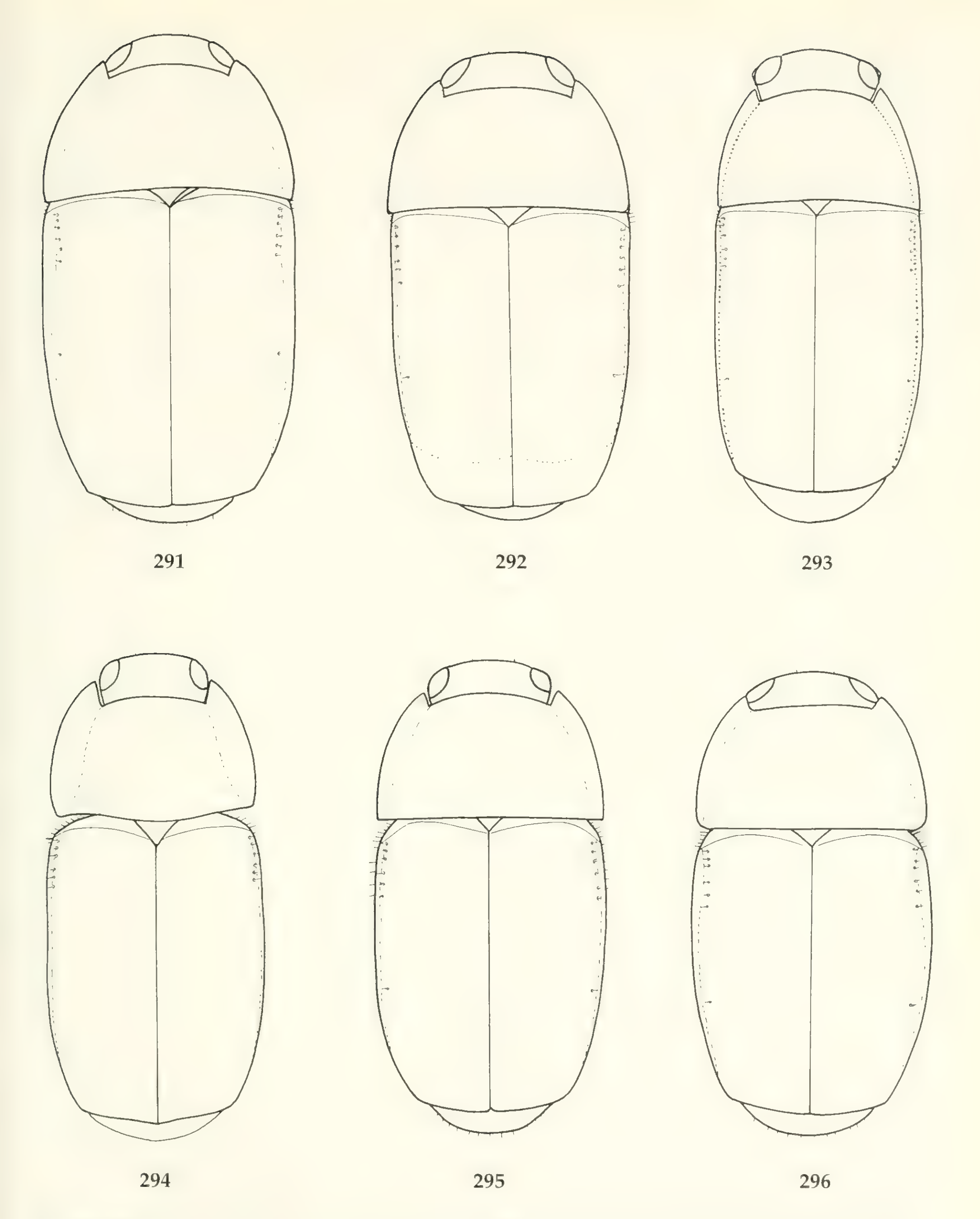
11. Acknowledgements

I am greatly indebted to all persons who furnished me with types and specimens from the collections they care for or from their own collections: Dr. R. Anderson (Ottawa), Mr. D. Azuma (Philadelphia), Prof. Dr. G. E. Ball (Edmonton), Mr. V. Bejsak (Sydney), Dr. R. T. Bell (Burlington), Dr. M. Brancucci (Basel), Mr. M. J. D. Brendell (London), Dr. G. Brown (Darwin), Dr. R. Davidson (Pittsburgh), Dr. K. Desender (Bruxelles), Dr. T. Deuve (Paris), Dr. T. L. Erwin (Washington, D. C.), Dr. A. Floren (Würzburg), Dr. F. Génier (Ottawa), Mr. G. Hangay (Sydney), Mr. T. L. Hawkeswood (Hastings Point); Dr. L. Herman (New York), Mr. G. F. Hevel (Washington, D. C.), Dr. F. Hieke (Berlin), Mr. S. Hine (London), Dr. T. Holloway (Sydney), Dr. D. S. Horning, Jr. (Sydney), Dr. T. Houston (Perth), Prof. Dr. H. F. Howden (Ottawa), Dr. D. H. Kavanaugh (San Francisco), Dr. R. Krause (Dresden), Dr. J. Krikken (Leiden), Dr. J. Liebherr (Ithaca, N.Y.), Dr. P. Lindskog (Stockholm), Dr. M. Malipatil (formerly Darwin, now Melbourne), Dr. E. G. Matthews (Adelaide), Mrs. C. McPhee (Melbourne), Dr. O. Merkl (Budapest), Mr. P. A. Meyer (Melbourne), Dr. G. B. Monteith (Brisbane), Dr. B. P. Moore (Canberra), Dr. A. F. Newton, Jr. (Chicago), Mr. C. O'Toole (Oxford), Dr. R. Poggi (Genoa), Dr. G. Samuelson (Honolulu), Dr. W. Schawaller (Stuttgart), Dr. G. Scherer (München), Mrs. R. Schneider (Brisbane), Dr. H. Schönmann (Wien), the late Mr. J. Sedlacek (Brisbane), Mr. D. Shpeley (Edmonton), Mr. R. Storey (Mareeba), Dr. N. E. Stork (London), Mr. C. Vogt (formerly Cambridge, Mass.), Mr. M. Wachtel (München), Mr. K. Walker (Melbourne), Mr. T. Weir (Canberra), Dr. L. Zerche (Eberswalde), Dr. R. Zur Strassen (Frankfurt/M.).

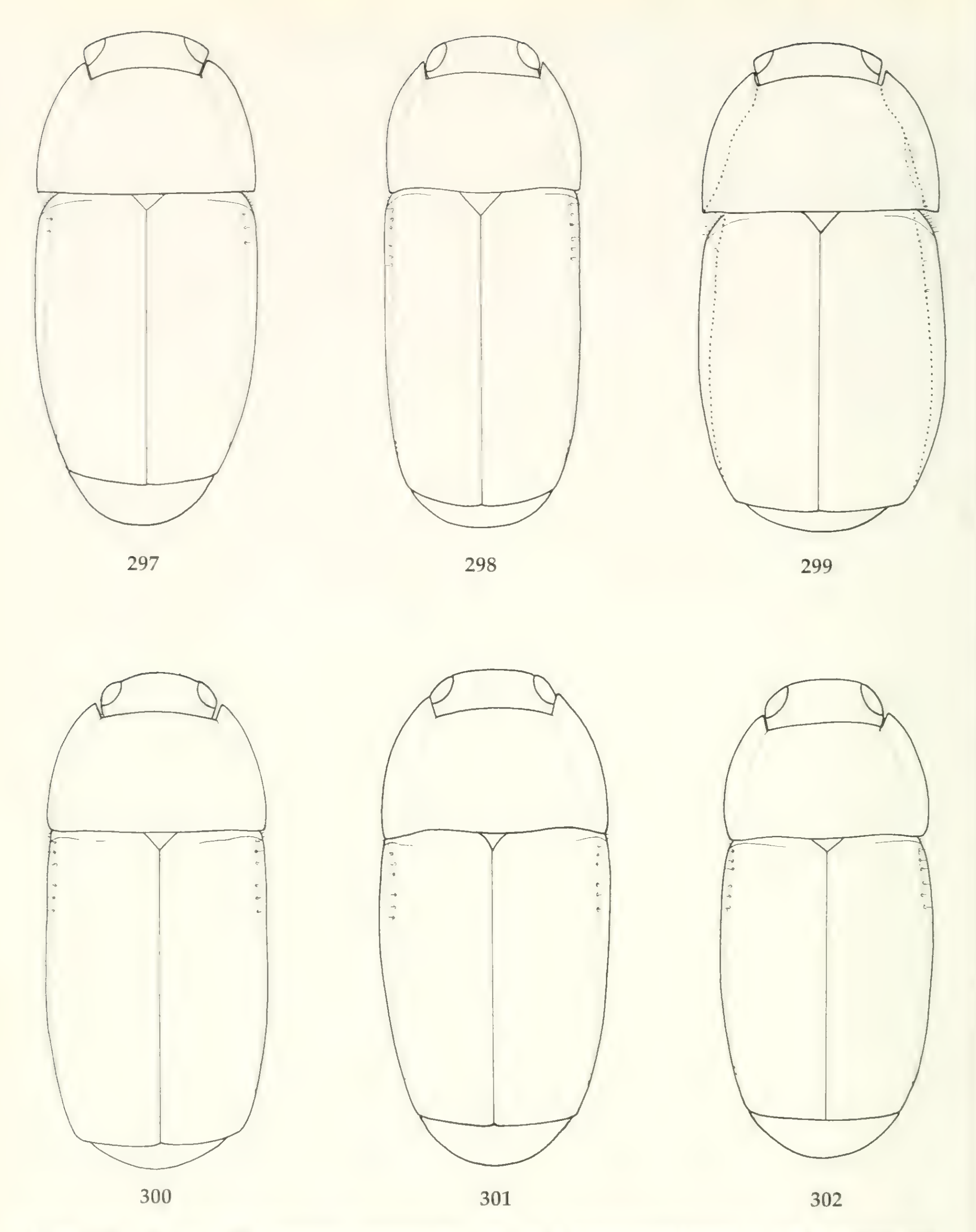
Mrs. C. McPhee (Melbourne), Dr. M. S. Harvey (Perth), Dr. E. G. Matthews (Adelaide), and Dr. G. B. Monteith (Brisbane) found some difficult localities for me. Thanks are further due to Mr. E. Diller (München) for the determination of some ants found with pseudomorphine specimens or mounted together with certain species. I also thank my wife who supported me during collecting under the harsh conditions of the far Northern Territory and northwestern Australia, and the Cape York Peninsula. Special thanks I want to pay to Prof. Dr. G. E. Ball (Edmonton) and Dr. B. P. Moore (Canberra) who undertook the labour to read critically a first draft of large parts of the manuscript. I am much indebted to both reviewers for numerous valuable comments on substance and presentation. Thanks are due to the Deutsche Forschungsgemeinschaft (DFG) for supporting this study by four travel grants and by a grant for publishing expenses. I also thank the authorities of the National Parks and Wildlife Services of Queensland, Victoria, and the Northern Territory for kindly permitting collecting in some National Parks.



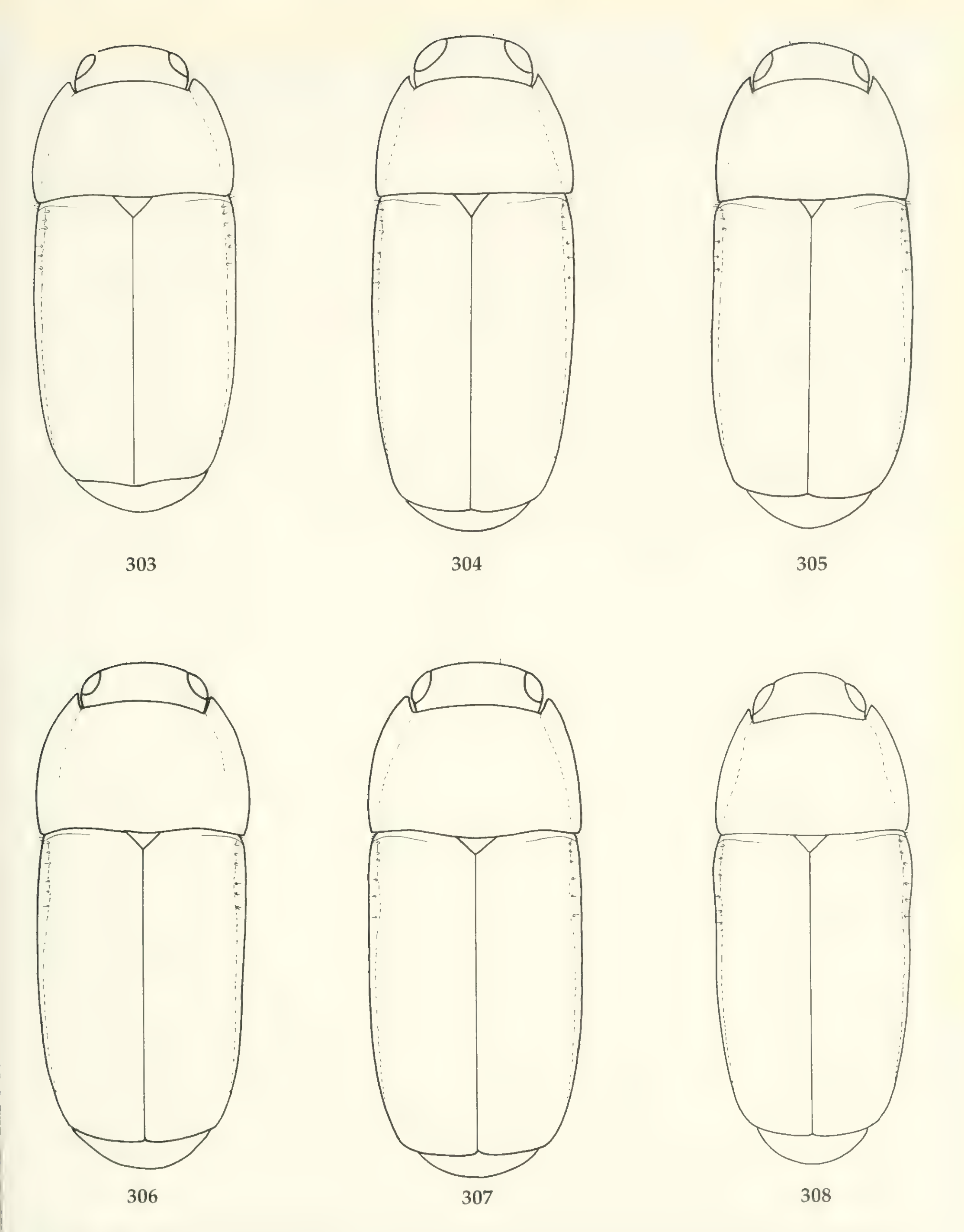
Figs 284-290. Habitus. **284.** *Pseudomorpha (Notopseudomorpha) laevissima* Chaudoir. **285.** *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane). **286.** *P. (A.) insignis pilosa*, subspec. nov. **287.** *P. (A.) subangulata*, spec. nov. **288.** *P. (A.) brevis*, spec. nov. **289.** *Adelotopus dytiscides* Newman. **290.** *A. ulrichi*, spec. nov. Lengths: 6.8 mm; 6.7 mm; 6.0 mm; 5.9 mm; 5.4 mm; 8.8 mm; 8.6 mm.



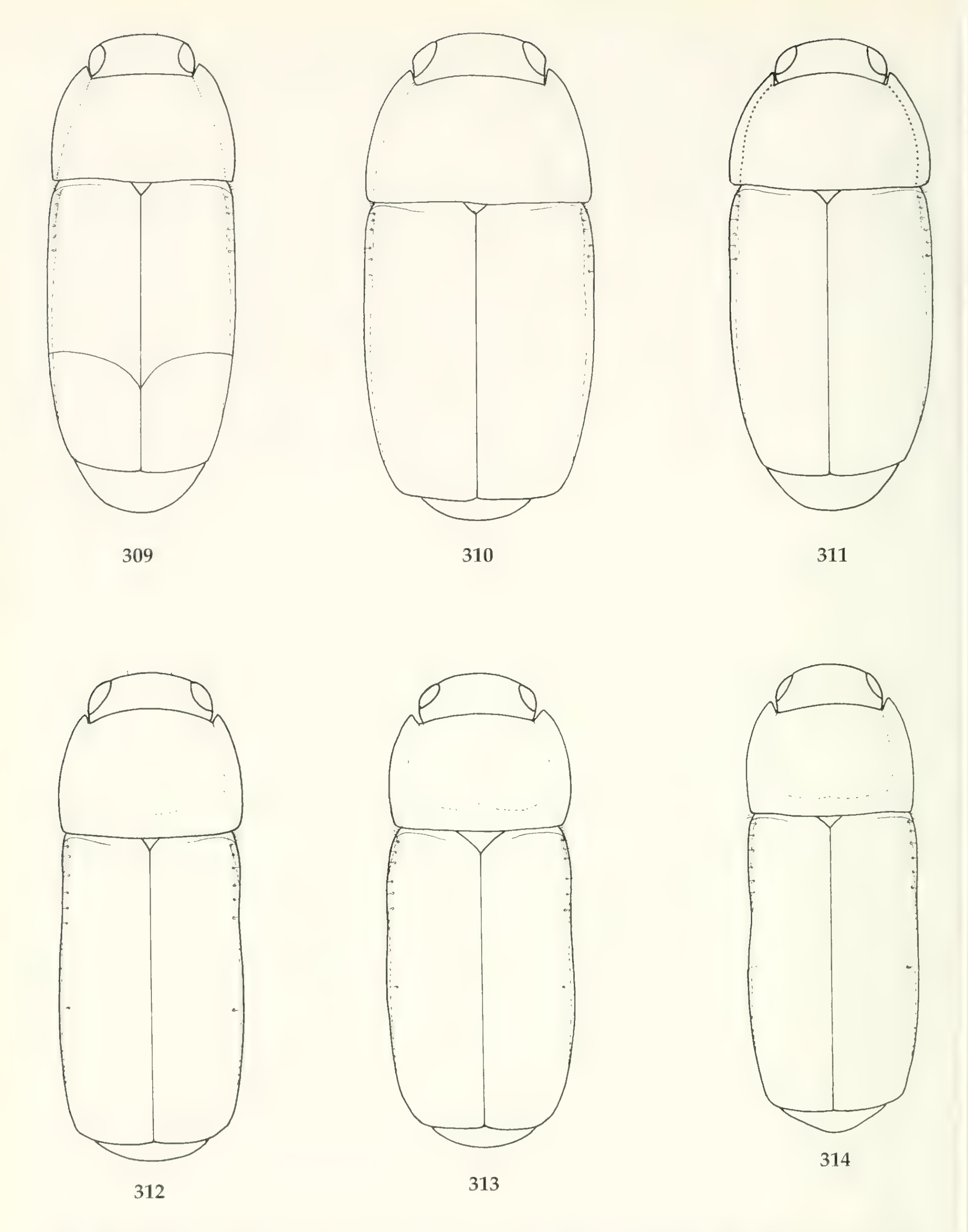
Figs 291-296. Habitus. **291.** *Adelotopus latior*, spec. nov. **292.** *A. apicalis* Macleay. **293.** *A. zborowskii*, spec. nov. **294.** *A. sericeus*, spec. nov. **295.** *A. howdenorum*, spec. nov. **296.** *A. katherinei*, spec. nov. Lengths: 7.4 mm; 7.5 mm; 6.4 mm; 7.0 mm; 6.7 mm; 5.8 mm.



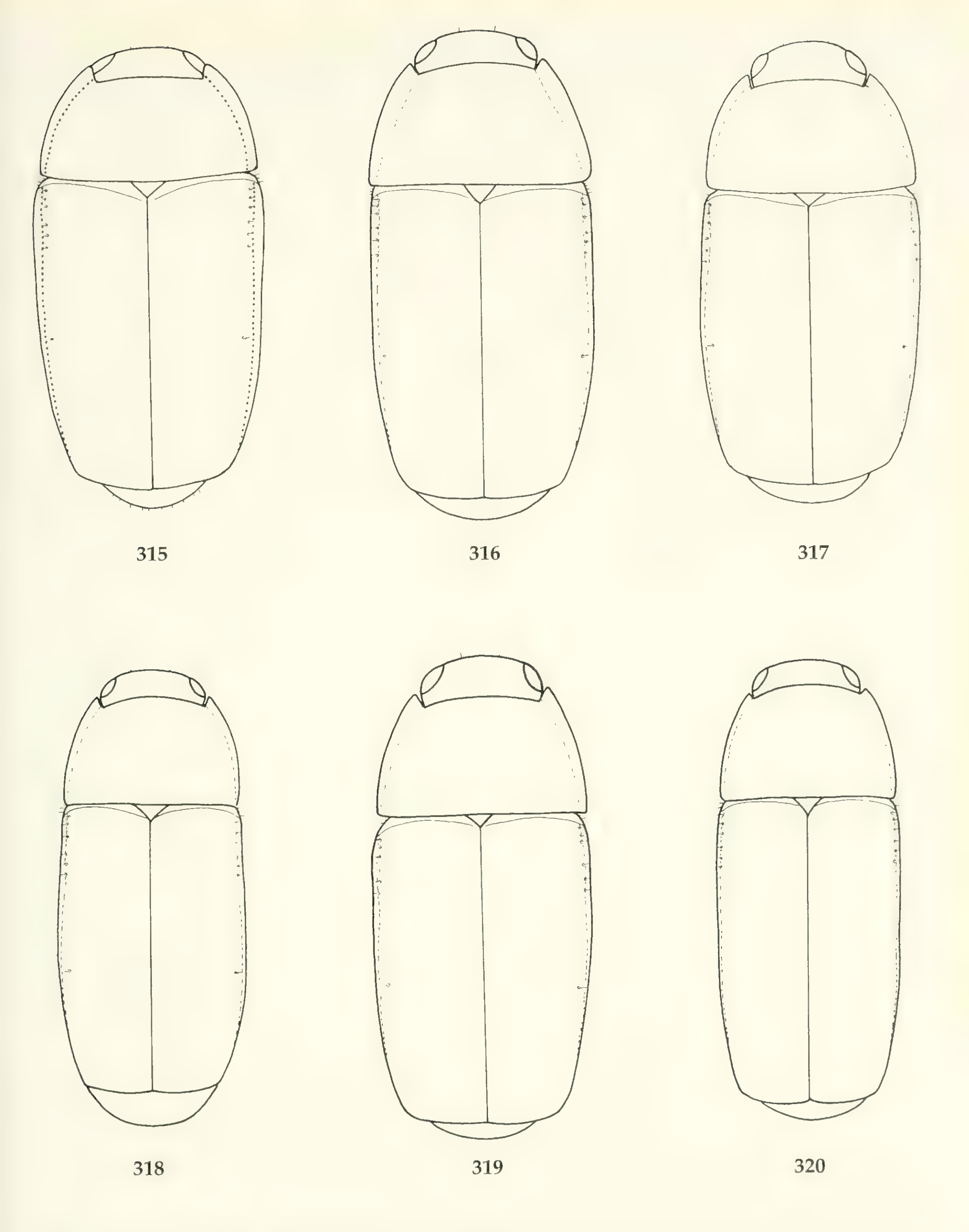
Figs 297-302. Habitus. **297.** *Adelotopus brevipennis* Macleay. **298.** *A. elongatulus* Macleay. **299.** *A. rufomarginatus*, spec. nov. **300.** *A. adelaideae*, spec. nov. **301.** *A. rufescens*, spec. nov. **302.** *A. flavus*, spec. nov. Lengths: 5.6 mm; 5.9 mm; 7.0 mm; 6.9 mm; 6.9 mm; 5.5 mm.



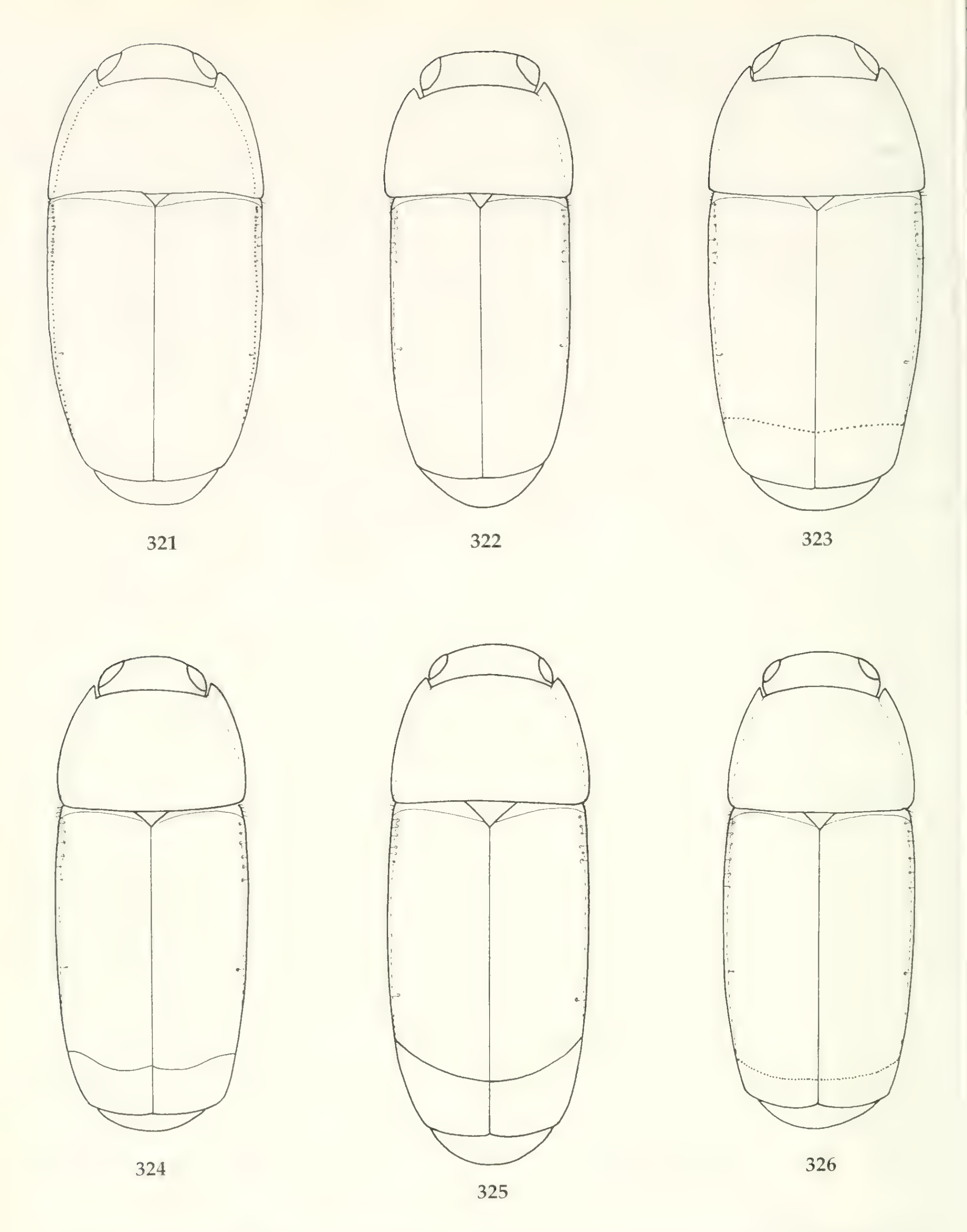
Figs 303-308. Habitus. **303.** *Adelotopus piceus*, spec. nov. **304.** *A. longus longus*, spec. nov. **305.** *A. longus tropicus*, subspec. nov. **306.** *A. sinuaticollis sinuaticollis*, spec. nov. **307.** *A. sinuaticollis calliope*, subspec. nov. **308.** *A. bamagae*, spec. nov. Lengths: 5.9 mm; 6.2 mm; 6.4 mm; 6.35 mm; 6.55 mm; 6.65 mm.



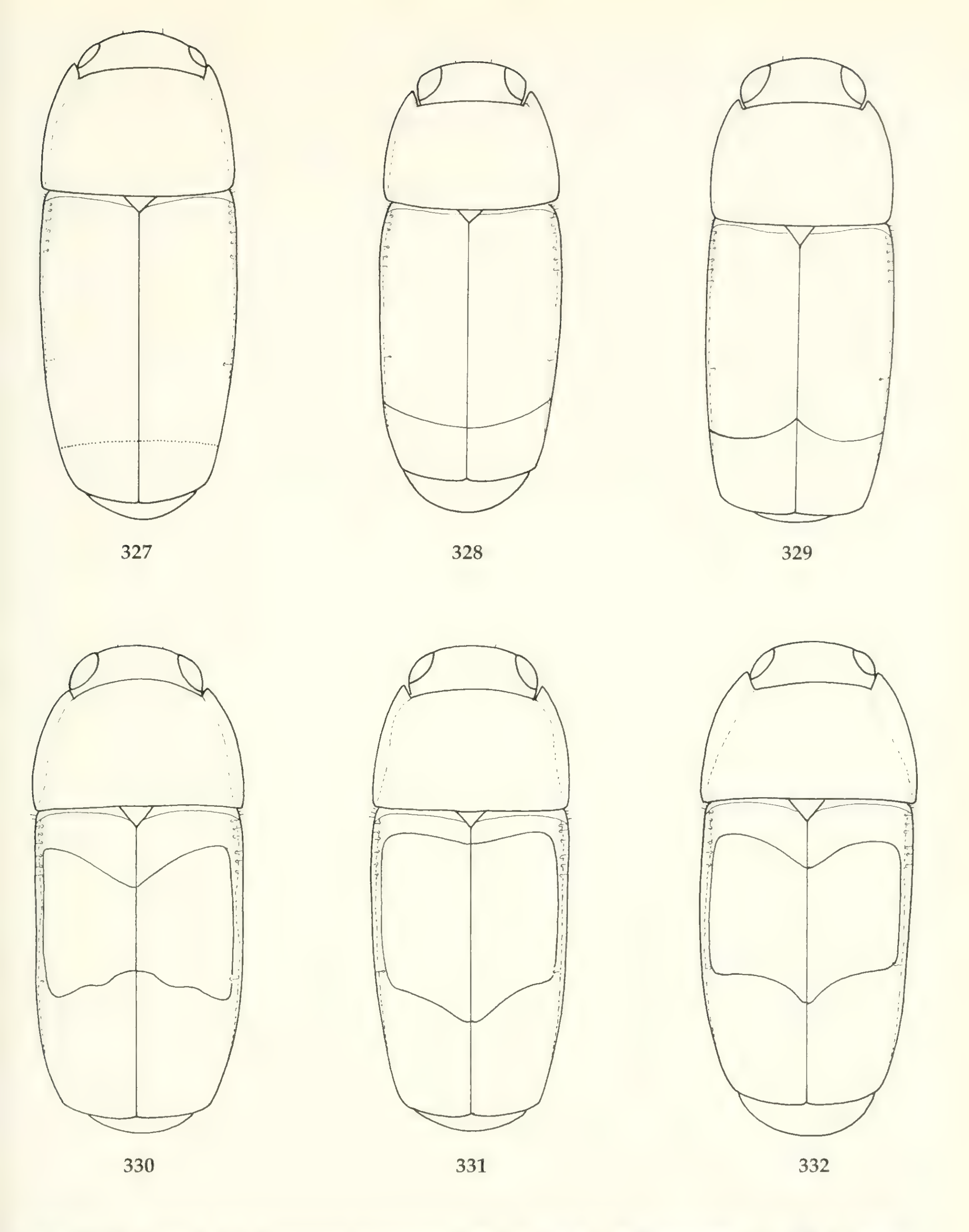
Figs 309-314. Habitus. **309.** *Adelotopus rufozonatus*, spec. nov. **310.** *A. edithae*, spec. nov. **311.** *A. atrorufus*, spec. nov. **312.** *A. marginicollis*, spec. nov. **313.** *A. coriaceus*, spec. nov. **314.** *A. seminitidus*, spec. nov. Lengths: 7.3 mm; 5.5 mm; 6.8 mm; 5.55 mm; 6.4 mm; 7.2 mm.



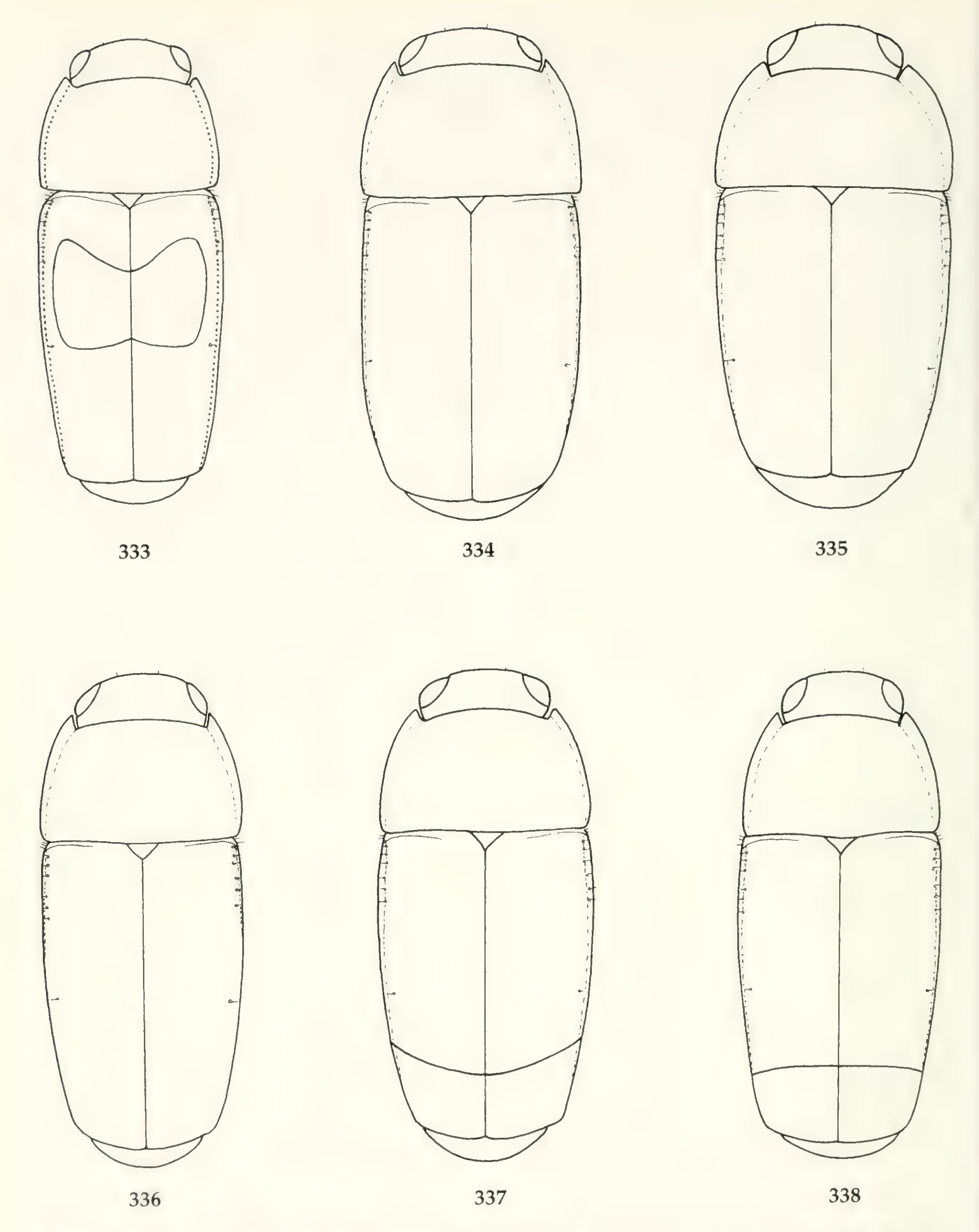
Figs 315-320. Habitus. **315.** *Adelotopus exactor* Darlington. **316.** *A. politus* Castelnau. **317.** *A. variolosus* Lea. **318.** *A. aterrimus,* spec. nov. **319.** *A. doyeni,* spec. nov. **320.** *A. substriatus,* spec. nov. Lengths: 7.0 mm; 6.8 mm; 7.3 mm; 8.55 mm; 6.5 mm; 6.8 mm.



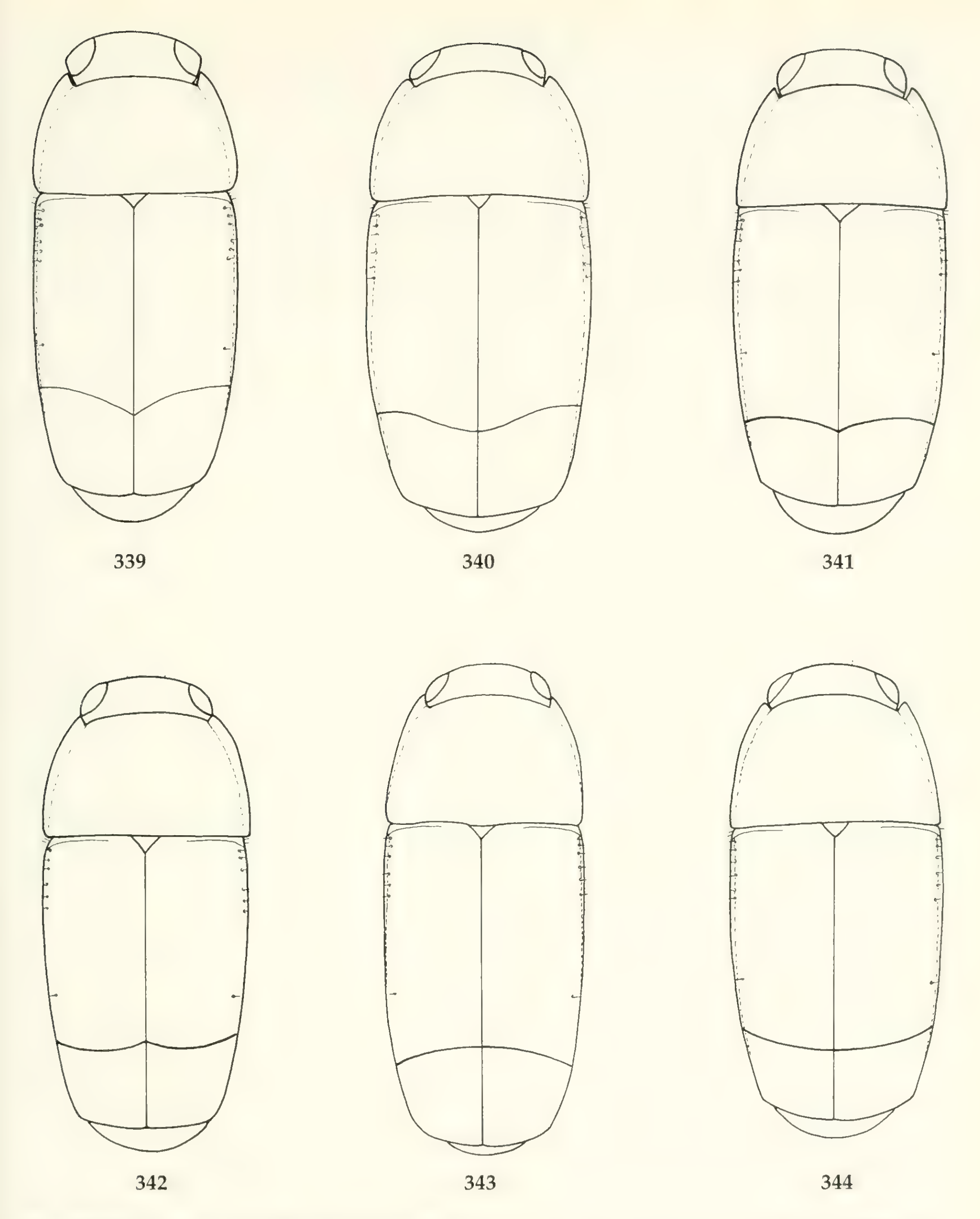
Figs 321-326. Habitus. **321.** *Adelotopus sedlaceki*, spec. nov. **322.** *A. caniae*, spec. nov. **323.** *A. rufocaudatus*, spec. nov. **324.** *A. haemorrhoidalis* Erichson. **325.** *A. minor*, spec. nov. **326.** *A. nitens*, spec. nov. Lengths: 6.7 mm; 5.45 mm; 5.85 mm; 7.75 mm; 6.3 mm; 6.35 mm.



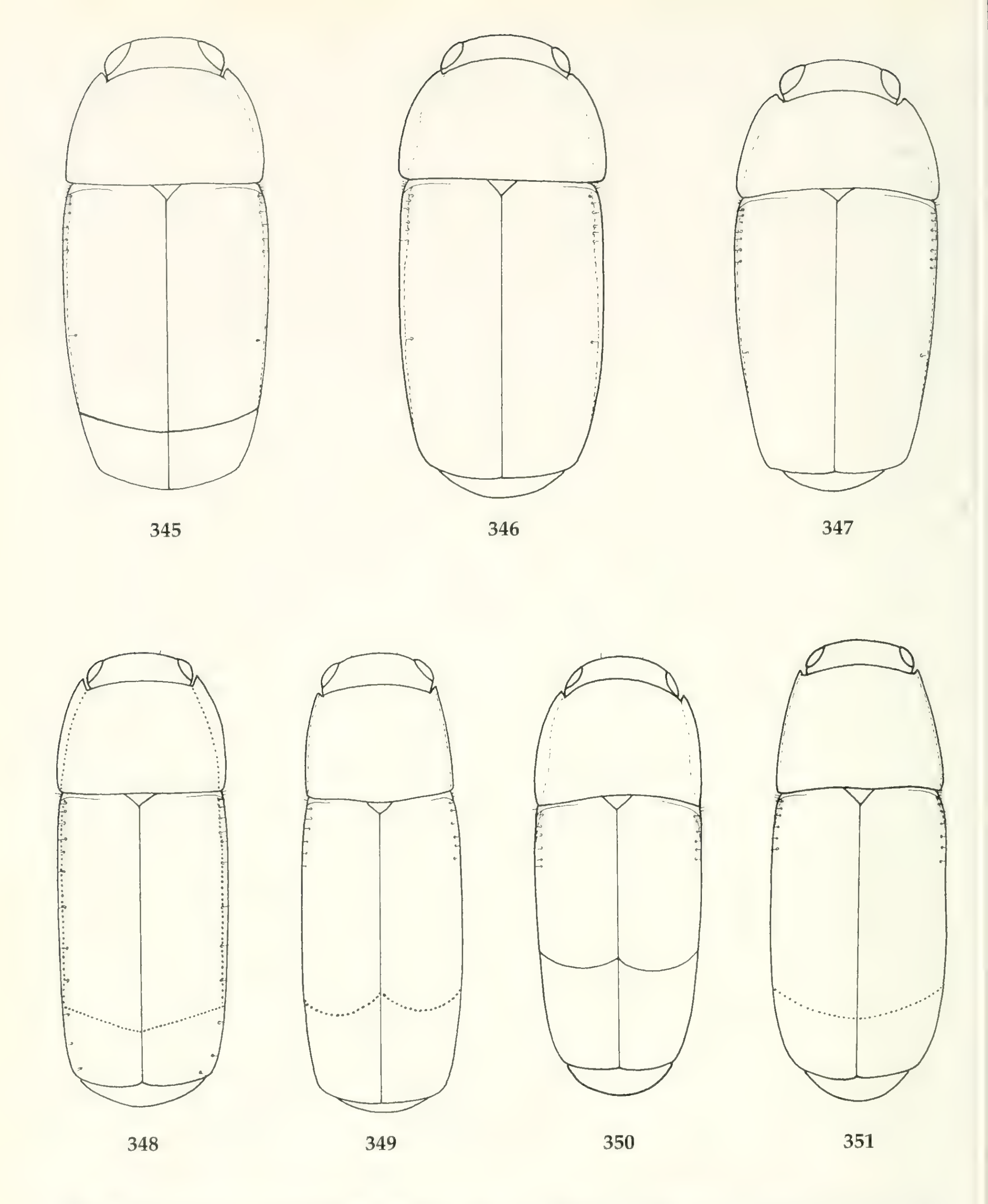
Figs 327-332. Habitus. **327.** *Adelotopus sparsepunctatus*, spec. nov. **328.** *A. semilunatus*, spec. nov. **329.** *A. kurandae*, spec. nov. **330.** *A. bimaculatus bimaculatus* Macleay. **331.** *A. bimaculatus angustior*, subspec. nov. **332.** *A. languidus*, spec. nov. Lengths: 5.9 mm; 5.5 mm; 4.95 mm; 5.45 mm; 5.6 mm; 6.0 mm.



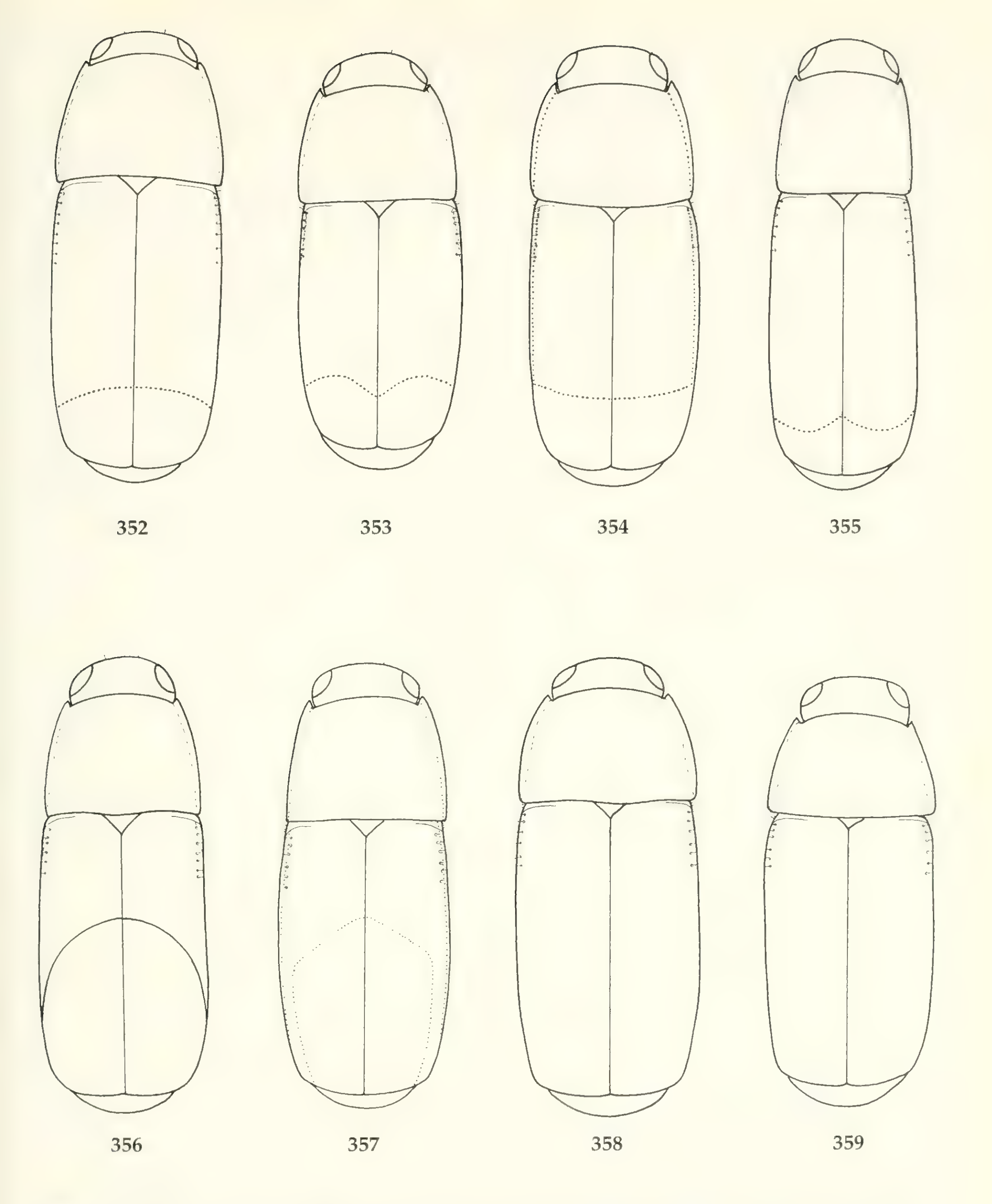
Figs 333-338. Habitus. **333.** *Adelotopus clepsydra*, spec. nov. **334.** *A. multipunctatus*, spec. nov. **335.** *A. ovatus*, spec. nov. **336.** *A. browni*, spec. nov. **337.** *A. jacobsoni* Ritsema. **338.** *A. geminus*, spec. nov. Lengths: 4.15 mm; 5.65 mm; 5.6 mm; 5.8 mm; 5.9 mm; 6.3 mm.



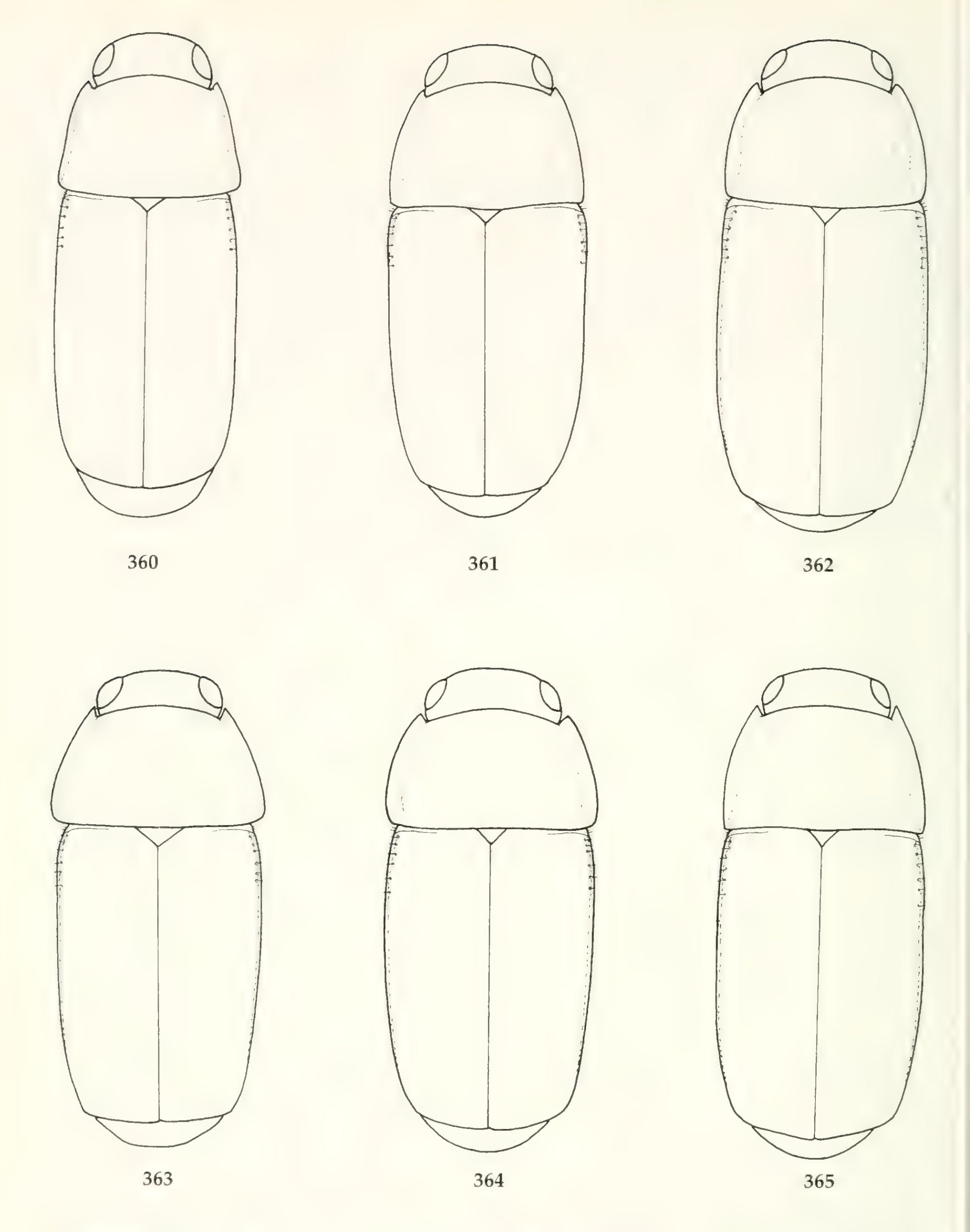
Figs 339-344. Habitus. **339.** *Adelotopus laticaudatus*, spec. nov. **340.** *A. debitor* Darlington. **341.** *A. nitidior*, spec. nov. **342.** *A. yorkensis*, spec. nov. **343.** *A. convexicollis*, spec. nov. **344.** *A. gibbosus*, spec. nov. Lengths: 6.3 mm; 5.85 mm; 5.6 mm; 4.85 mm; 4.85 mm; 4.5 mm.



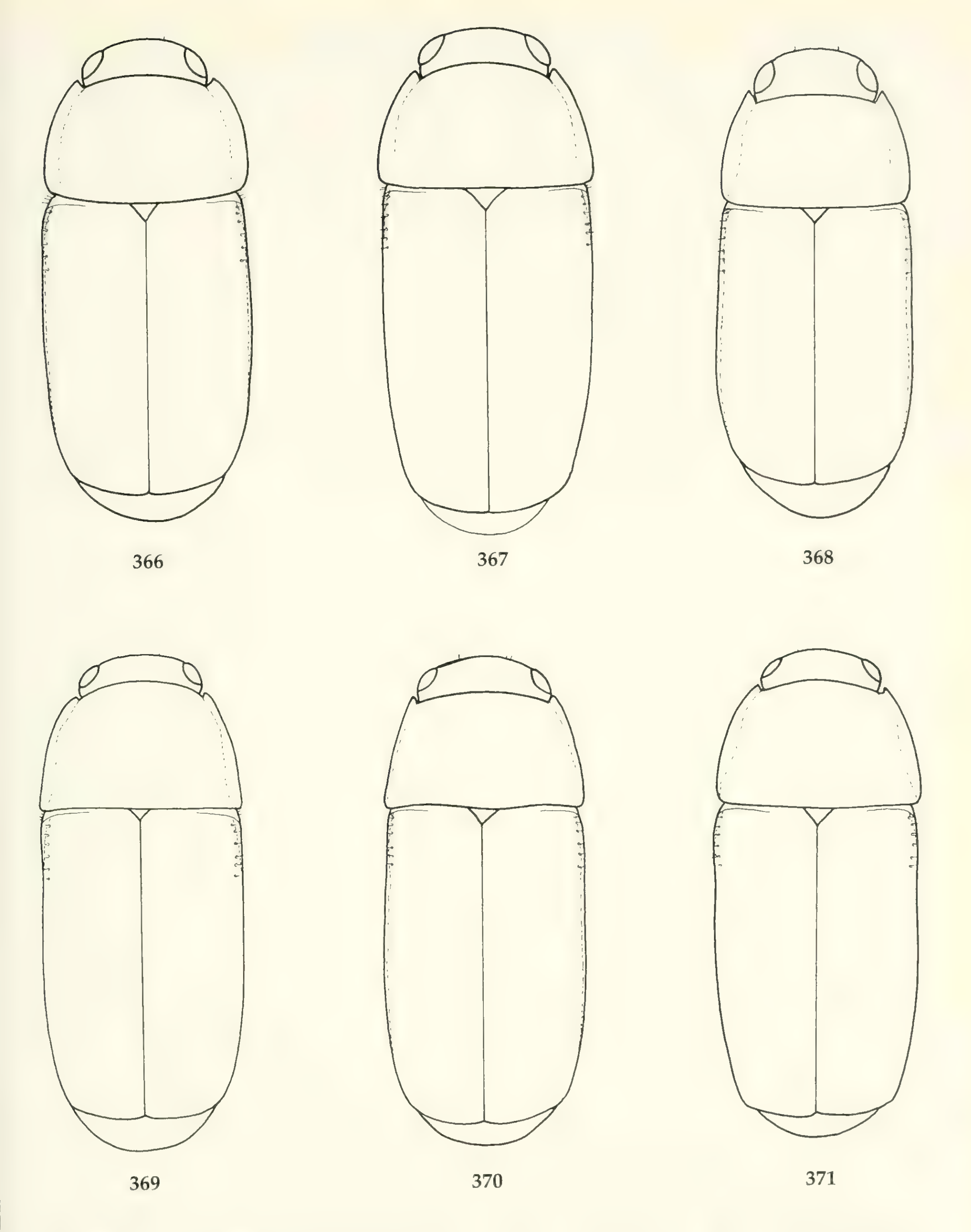
Figs 345-351. Habitus. **345.** *Adelotopus penelopeae,* spec. nov. **346.** *A. obsoletus,* spec. nov. **347.** *A. villosus,* spec. nov. **348.** *A. similis,* spec. nov. **349.** *A. tasmani* Blackburn. **350.** *A. nigricauda,* spec. nov. **351.** *A. seriepunctatus seriepunctatus* Notman. Lengths: 7.35 mm; 5.2 mm; 6.0 mm; 7.5 mm; 5.8 mm; 4.85 mm; 6.1 mm.



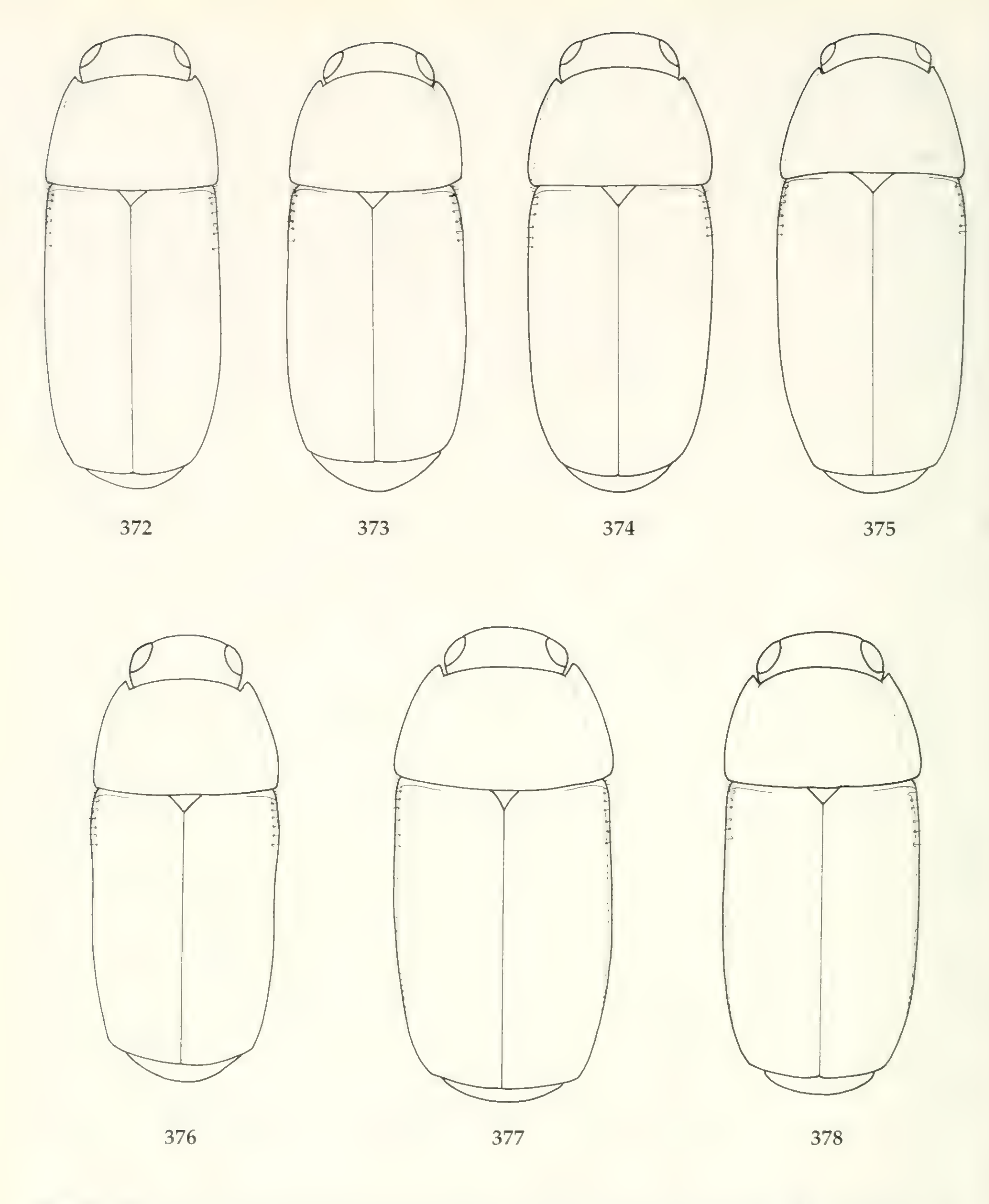
Figs 352-359. Habitus. **352.** *Adelotopus seriepunctatus striatus,* subspec. nov. **353.** *A. convexus,* spec. nov. **354.** *A. calvus,* spec. nov. **355.** *A. montisatri,* spec. nov. **356.** *A. puncticollis puncticollis* Notman. **357.** *A. puncticollis angustemaculatus,* subspec. nov. **358.** *A. rubiginosus* Newman. **359.** *A. distinguendus,* spec. nov. Lengths: 5.55 mm; 5.65 mm; 5.3 mm; 4.8 mm; 6.0 mm; 4.8 mm; 5.1 mm; 4.7 mm.



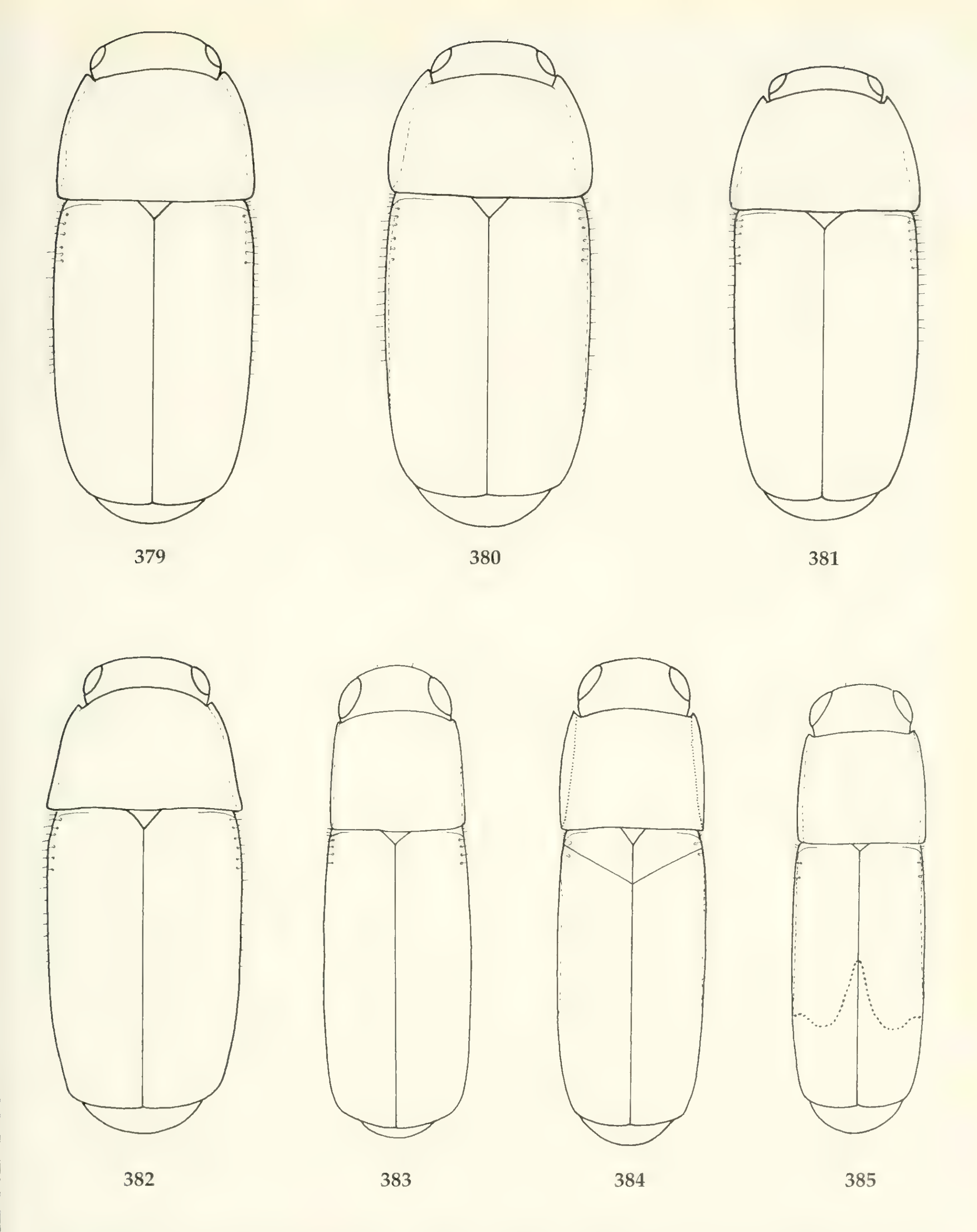
Figs 360-365. Habitus. **360.** *Adelotopus foliaceus*, spec. nov. **361.** *A. laticollis*, spec. nov. **362.** *A. cribricollis*, spec. nov. **363.** *A. luteus*, spec. nov. **364.** *A. houstoni*, spec. nov. **365.** *A. virgatus*, spec. nov. Lengths: 4.6 mm; 5.8 mm; 5.2 mm; 4.95 mm; 4.65 mm; 5.5 mm.



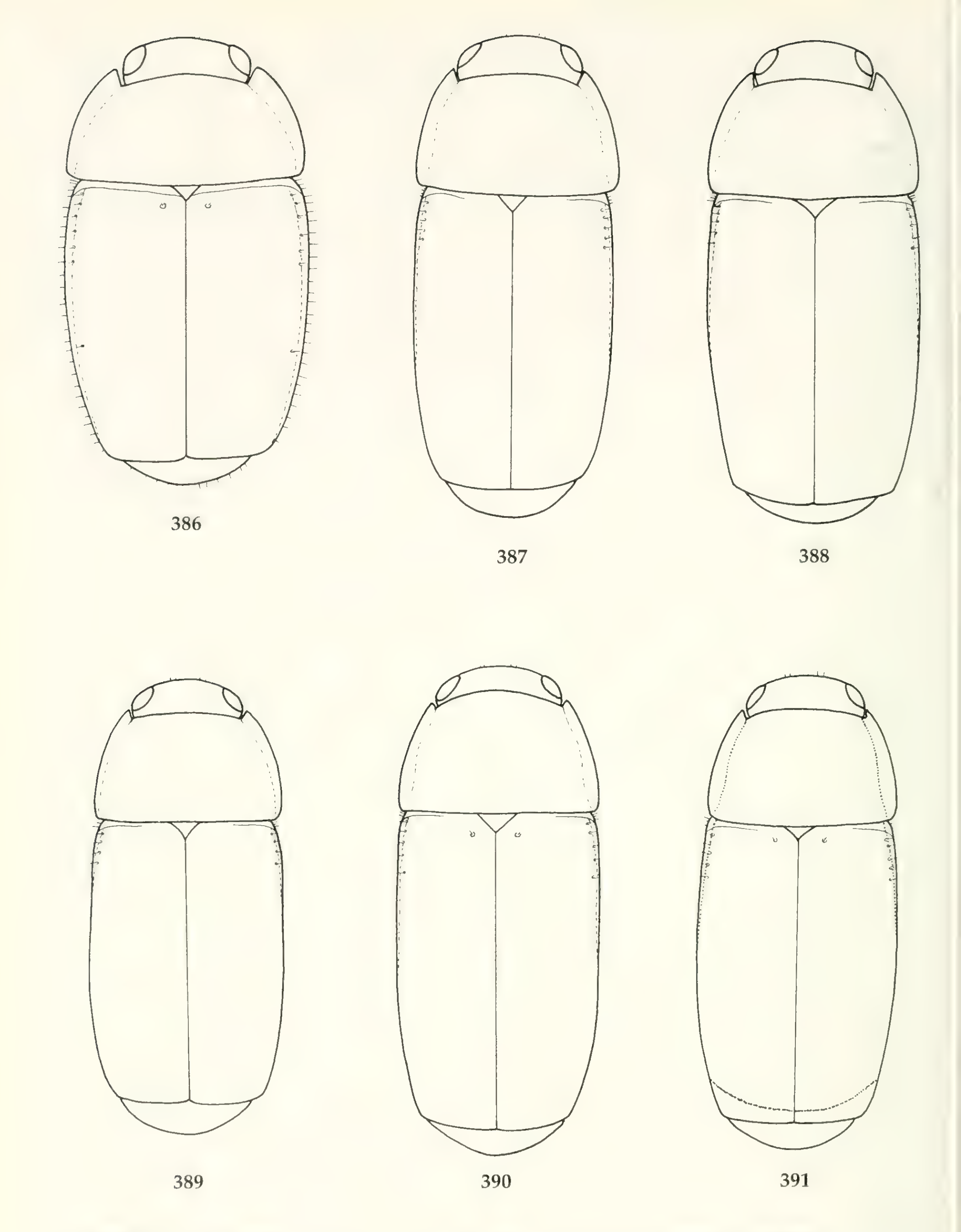
Figs 366-371. Habitus. **366.** *Adelotopus brittoni*, spec. nov. **367.** *A. adustus*, spec. nov. **368.** *A. punctatissimus*, spec. nov. **369.** *A. queenslandicus*, spec. nov. **370.** *A. aequus*, spec. nov. **371.** *A. palumae*, spec. nov. Lengths: 5.8 mm; 6.3 mm; 5.6 mm; 4.95 mm; 5.2 mm; 5.1 mm.



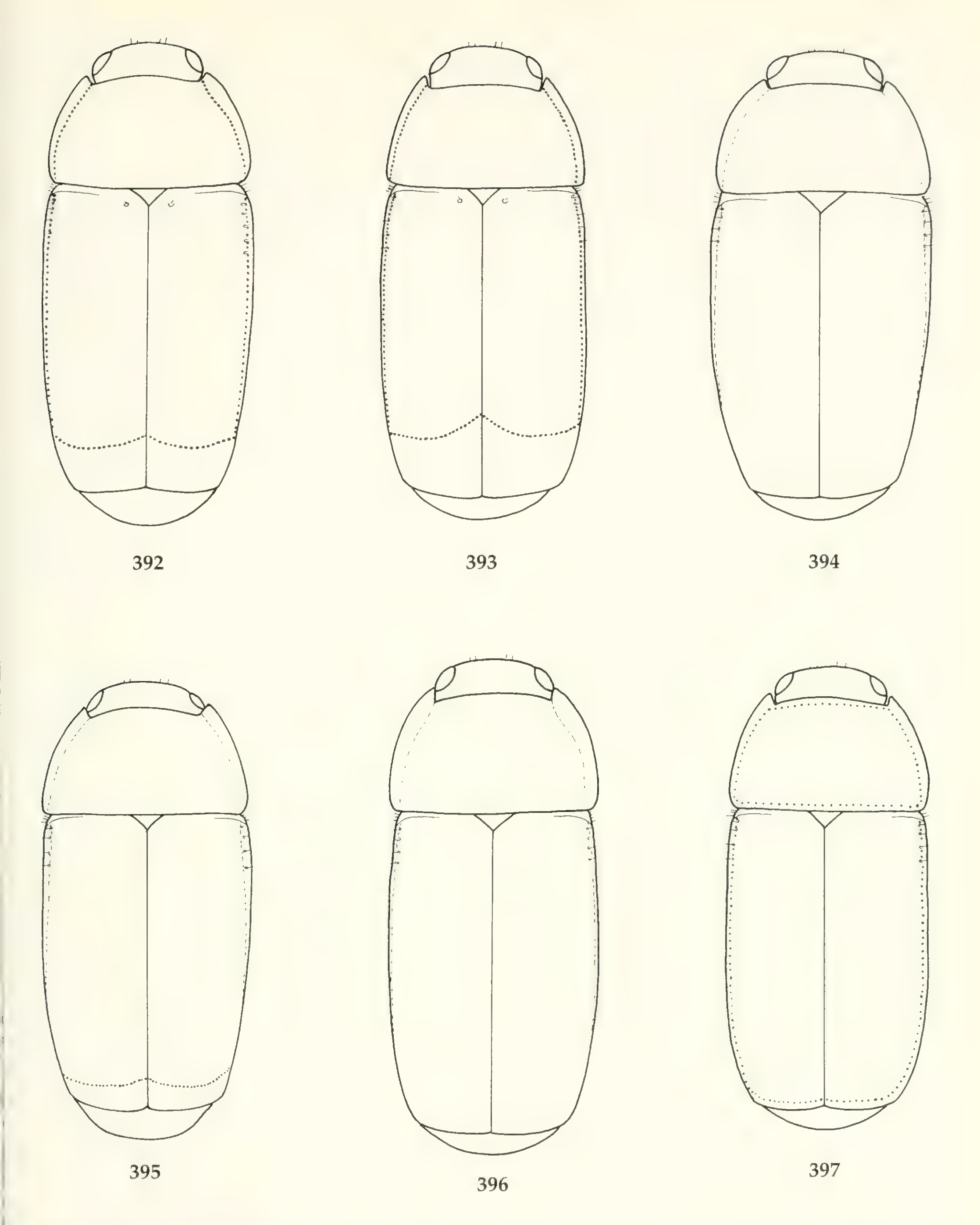
Figs 372-378. Habitus. **372.** *Adelotopus angustatus*, spec. nov. **373.** *A. flavescens*, spec. nov. **374.** *A. grossepunctatus*, spec. nov. **375.** *A. ooldeae*, spec. nov. **376.** *A. crucis*, spec. nov. **377.** *A. crassus*, spec. nov. **378.** *A. latipalpis*, spec. nov. Lengths: 5.6 mm; 3.9 mm; 5.0 mm; 5.4 mm; 5.5 mm; 6.65 mm; 5.7 mm.



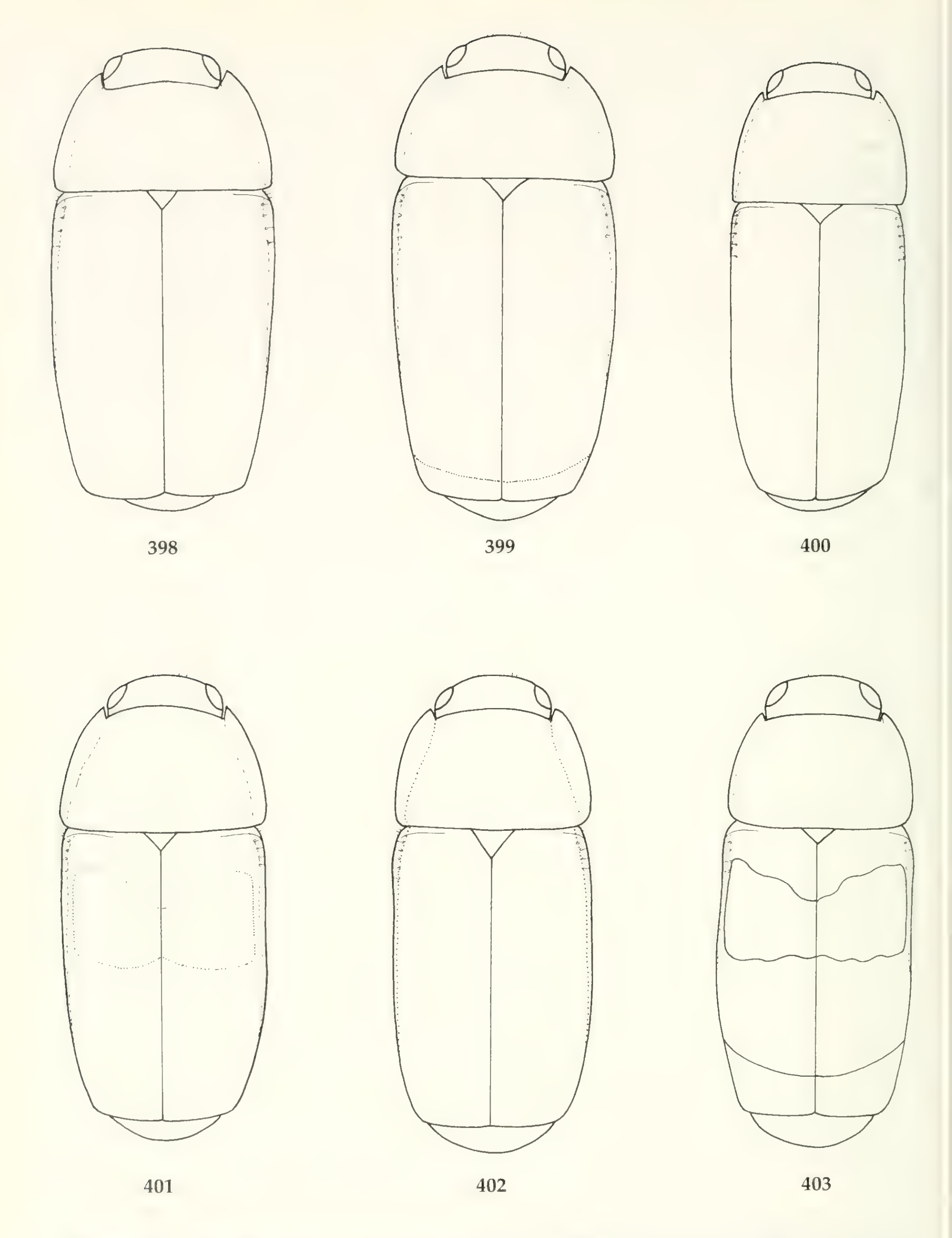
Figs 379-385. Habitus. **379.** *Adelotopus laevis* Macleay. **380.** *A. ciliatus ciliatus*, spec. nov. **381.** *A. ciliatus tenuipunctatus*, subspec. nov. **382.** *A. brevior*, spec. nov. **383.** *A. unicolor*, spec. nov. **384.** *A. linearis* Macleay. **385.** *A. bacillus*, spec. nov. Lengths: 5.1 mm; 4.85 mm; 5.2 mm; 4.6 mm; 4.65 mm; 4.8 mm; 5.2 mm.



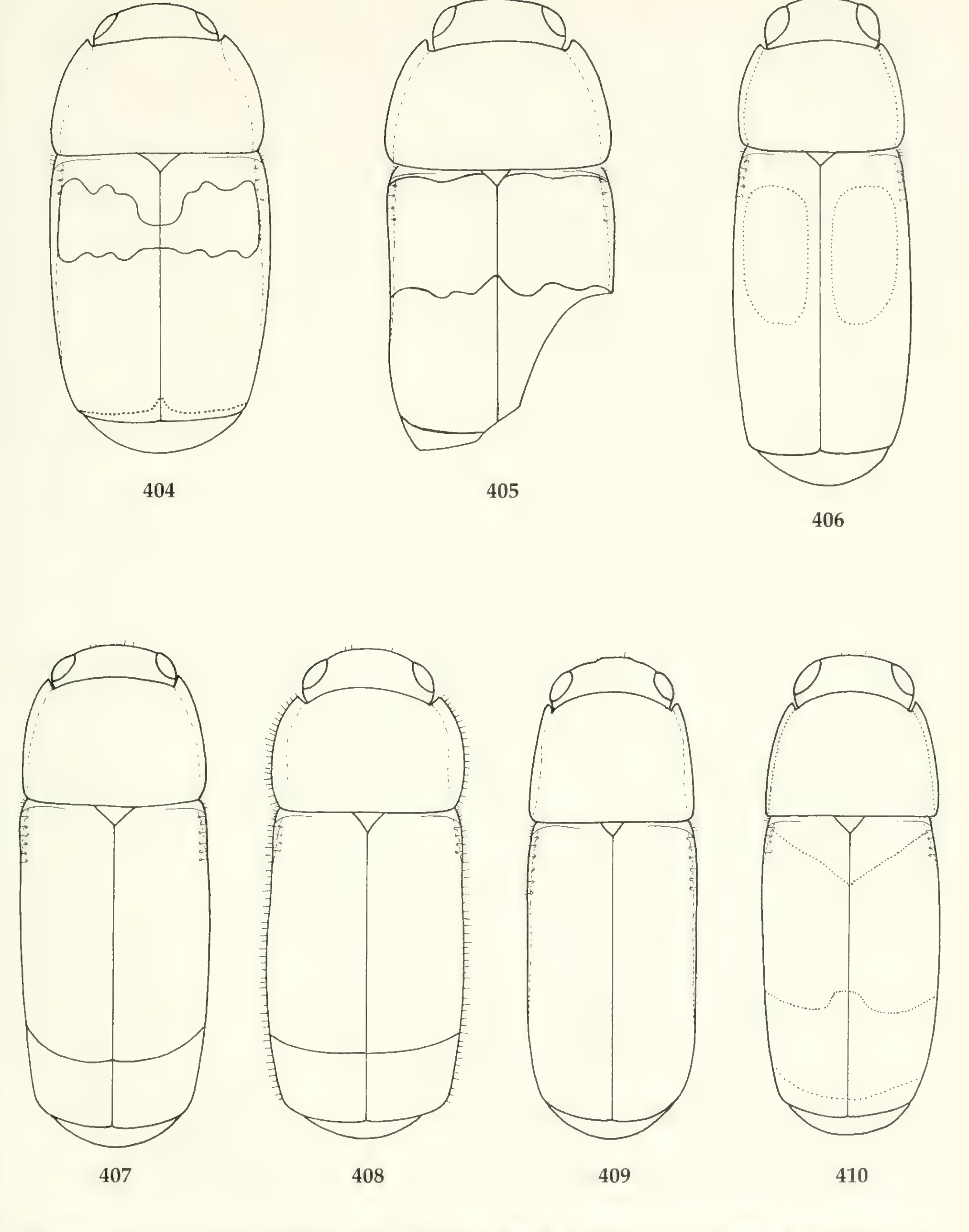
Figs 386-391. Habitus. **386.** *Adelotopus celeripes* Lea. **387.** *A. gyrinoides gyrinoides* Hope. **388.** *A. gyrinoides orientalis*, subspec. nov. **389.** *A. mainae*, spec. nov. **390.** *A. vicinus* Castelnau. **391.** *A. dubius dubius*, spec. nov. Lengths: 4.65 mm; 5.8 mm; 5.5 mm; 5.4 mm; 4.8 mm; 4.9 mm.



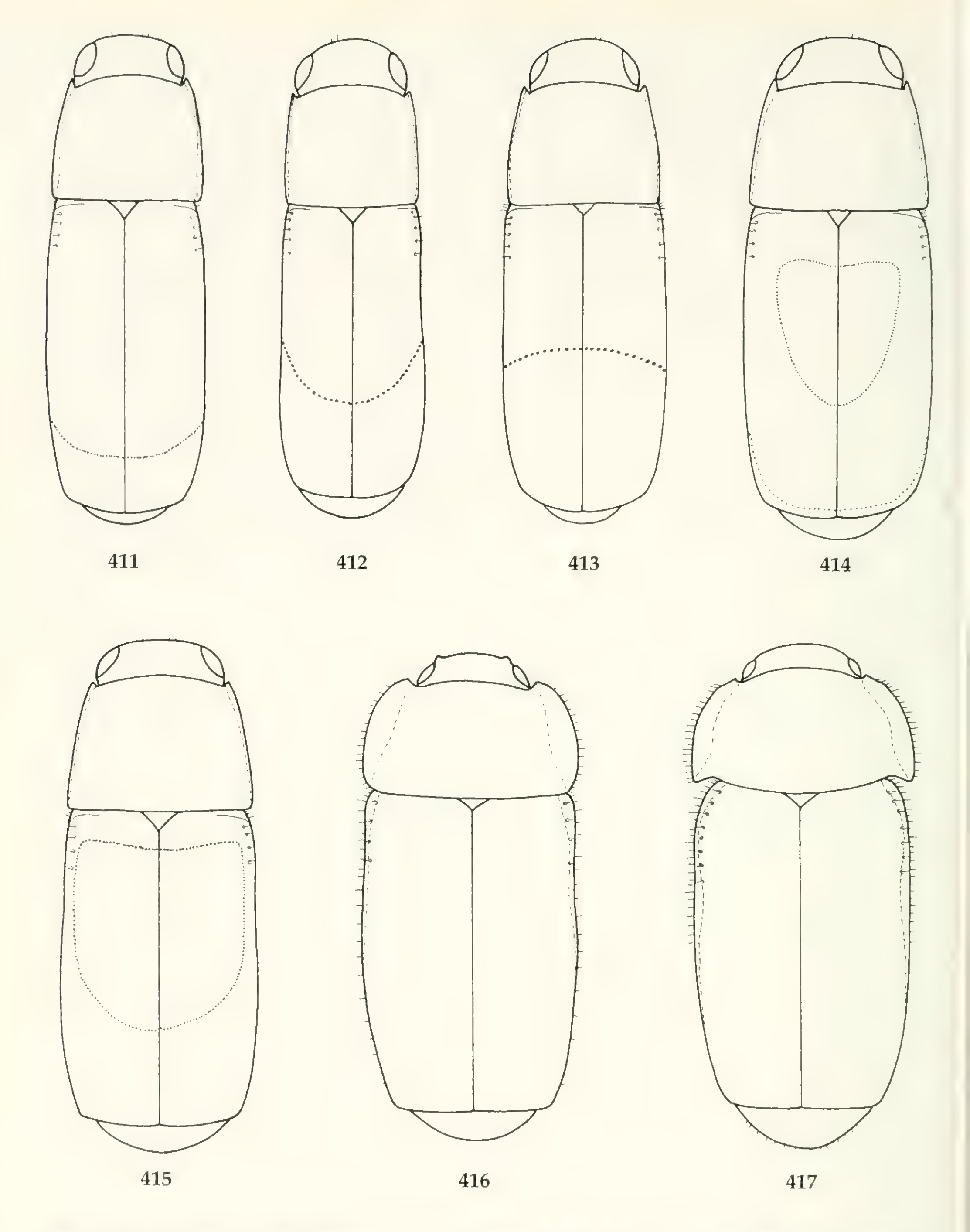
Figs 392-397. Habitus. **392.** *Adelotopus dubius glaber*, subspec. nov. **393.** *A. dubius hobartensis*, subspec. nov. **394.** *A. montorum*, spec. nov. **395.** *A. lawrencei*, spec. nov. **396.** *A. victoriensis*, spec. nov. **397.** *A. murrayanus*, spec. nov. Lengths: 5.6 mm; 5.6 mm; 5.35 mm; 5.7 mm; 5.5 mm; 5.35 mm.



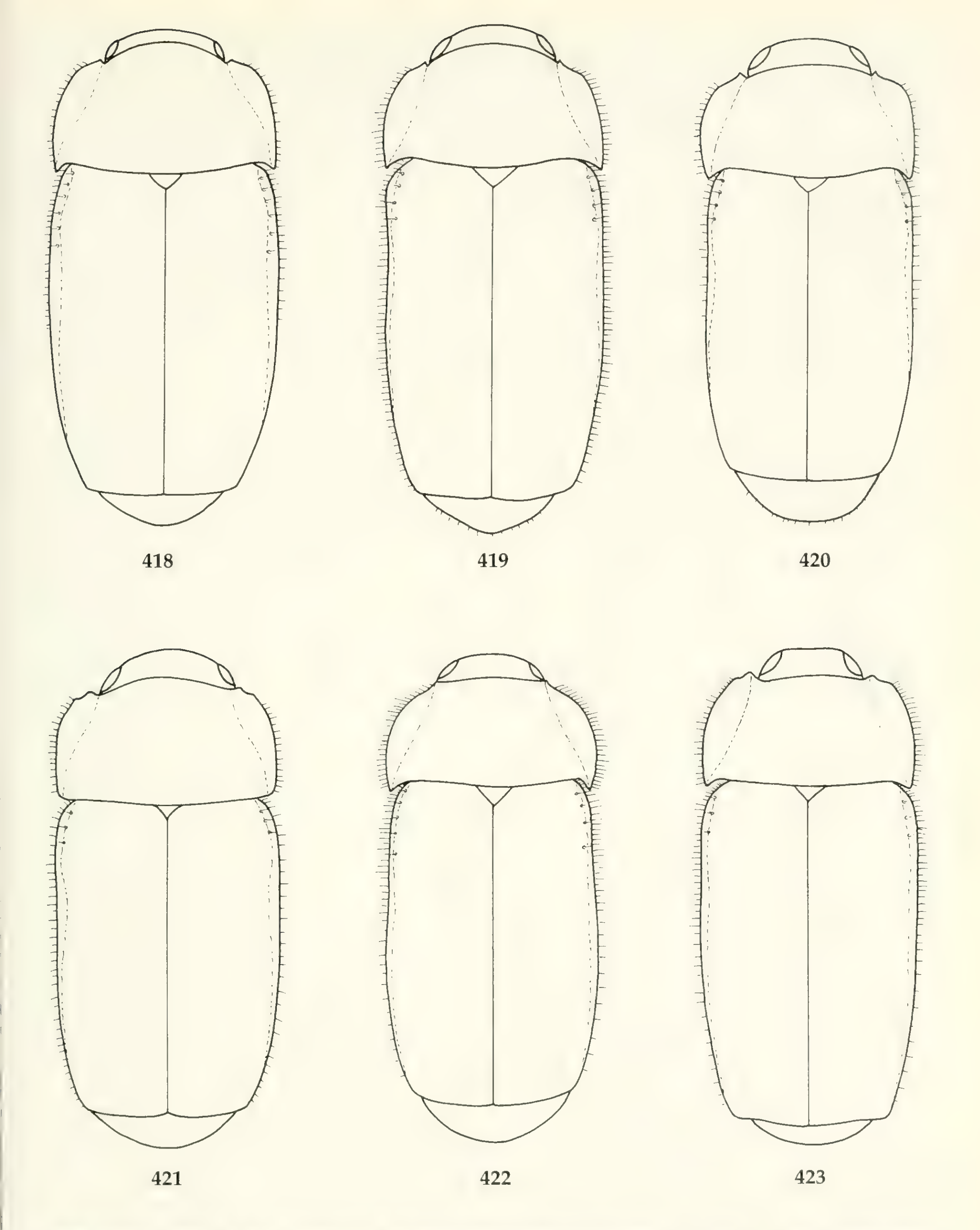
Figs 398-403. Habitus. **398.** *Adelotopus parumpunctatus*, spec. nov. **399.** *A. lunatus*, spec. nov. **400.** *A. gippslandicus*, spec. nov. **401.** *A. zonatus* Castelnau. **402.** *A. punctatus* Castelnau. **403.** *A. rufoguttatus* (Blackburn). Lengths: 6.1 mm; 6.55 mm; 5.3 mm; 3.8 mm; 5.1 mm; 4.85 mm.



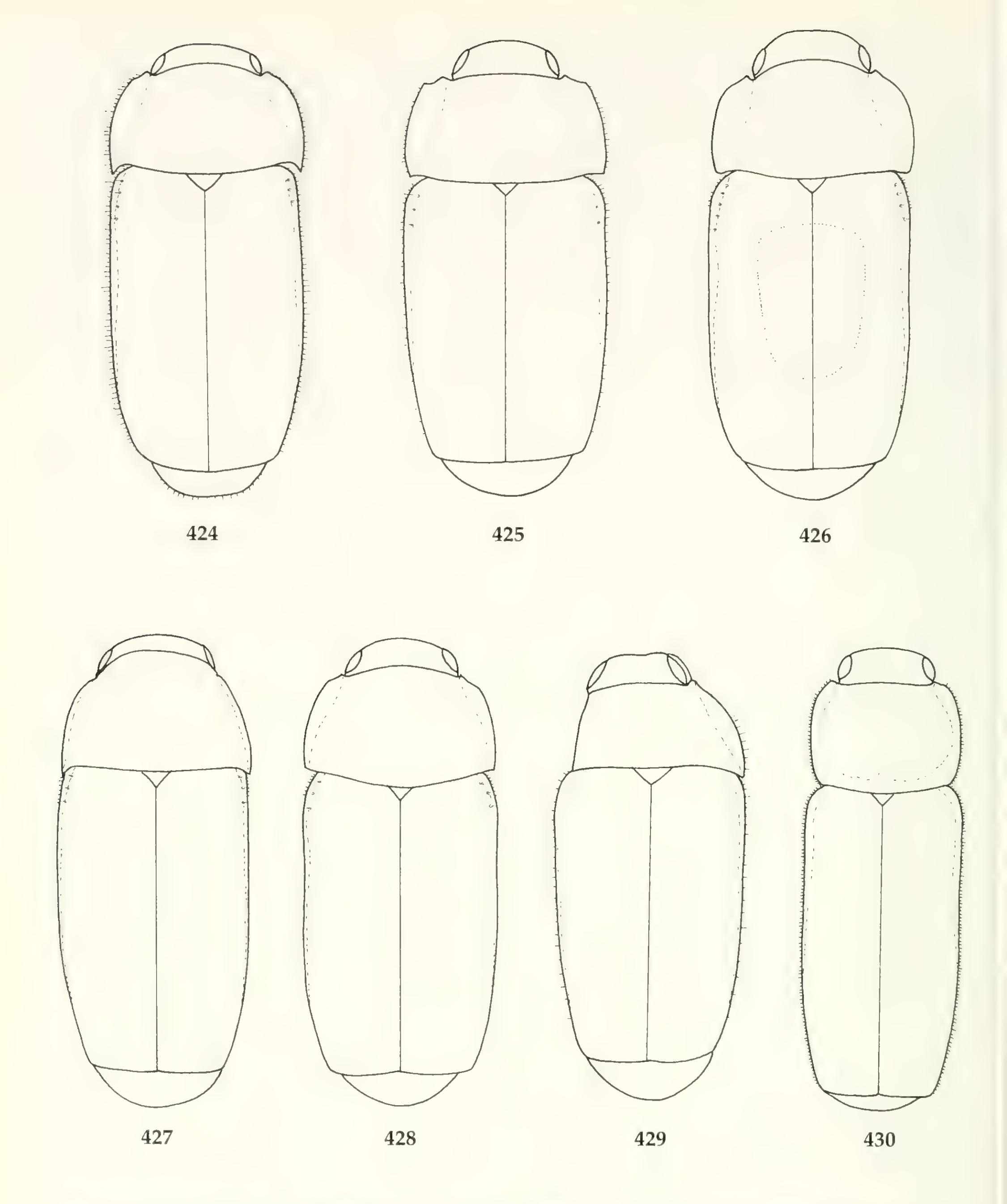
Figs 404-410. Habitus. **404.** *Adelotopus affinis* Castelnau. **405.** *A. basirufus*, spec. nov. **406.** *A. macilentus*, spec. nov. **407.** *A. punctulifer*, spec. nov. **408.** *A. analis* Macleay. **409.** *A. paroensis* Castelnau. **410.** *A. fasciatus* Castelnau. Lengths: 4.25 mm; 4.7 mm; 4.45 mm; 5.55 mm; 4.4 mm; 5.35 mm; 4.0 mm.



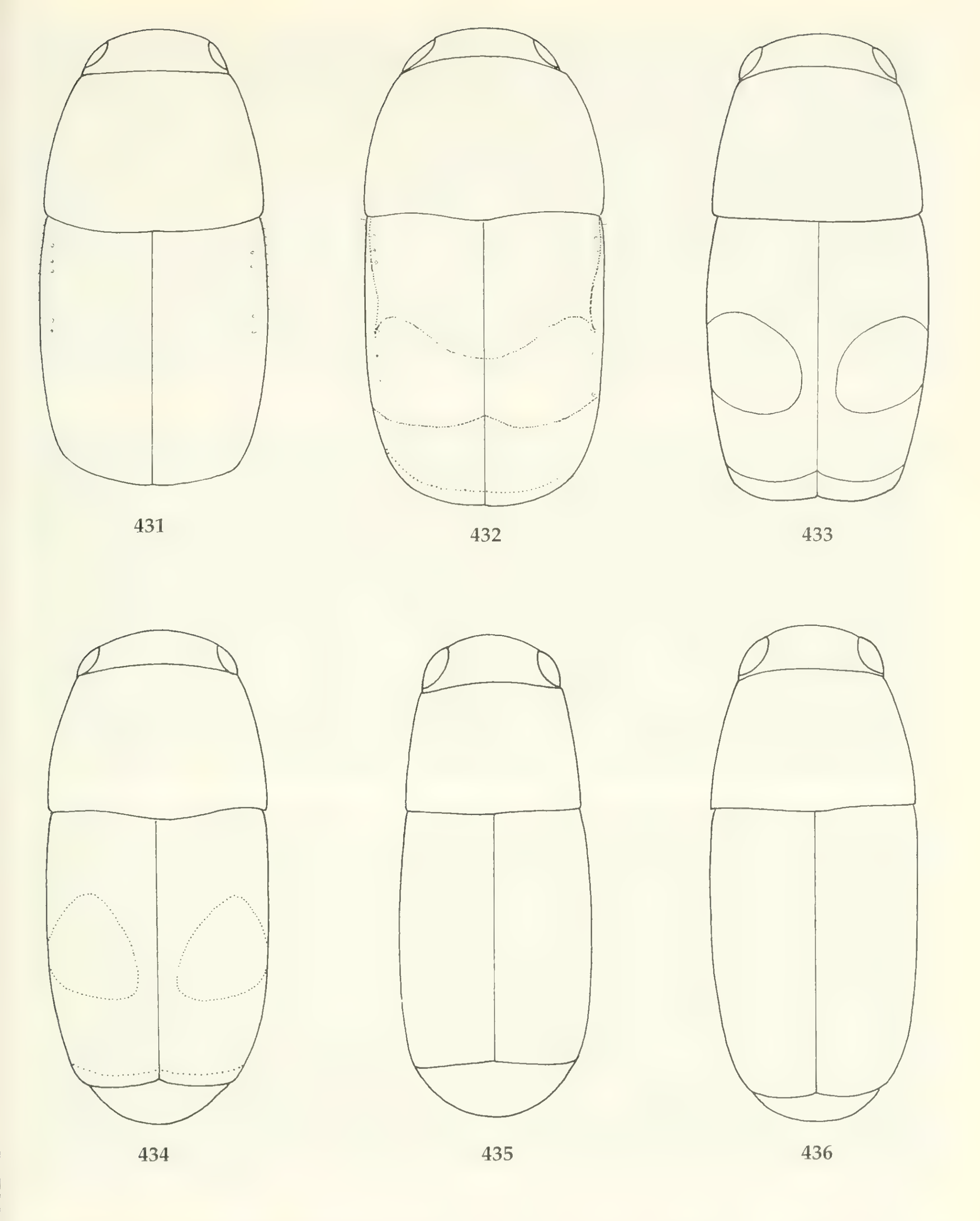
Figs 411-417. Habitus. **411.** *Adelotopus nemosomoides* Westwood. **412.** *A. longiformis*, spec. nov. **413.** *A. conicollis*, spec. nov. **414.** *A. maculipennis* Macleay. **415.** *A. cuneatus*, spec. nov. **416.** *Cainogenion (Procainogenion) ephippiatum* (Newman). **417.** *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood). Lengths: 4.8 mm; 5.5 mm; 5.4 mm; 3.9 mm; 4.3 mm; 4.5 mm; 7.2 mm.



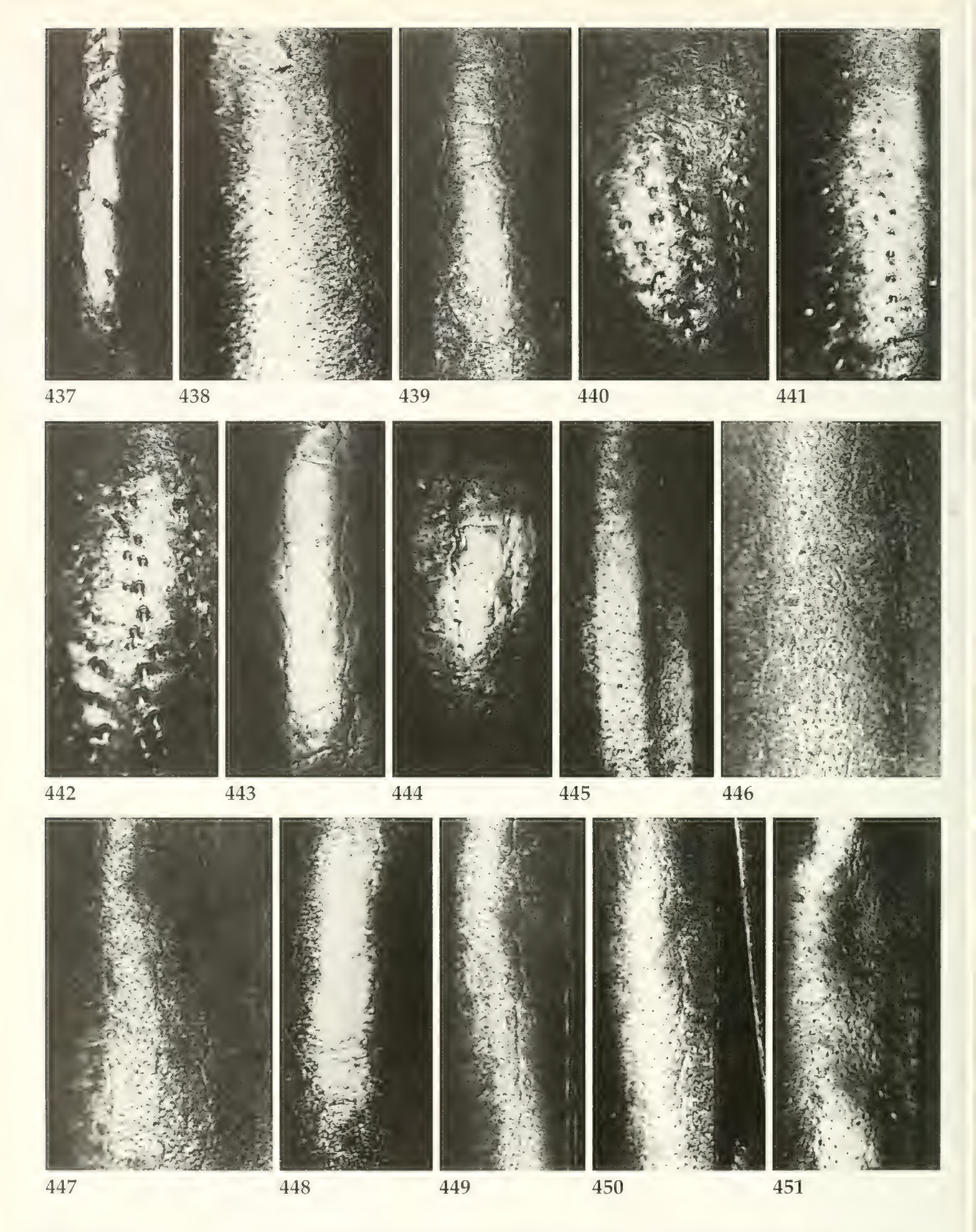
Figs 418-423. Habitus. **418.** *Cainogenion* (s. str.) *ipsoides occidentale,* subspec. nov. **419.** *C.* (s. str.) *creberrimum creberrimum* (Blackburn). **420.** *C.* (s. str.) *creberrimum gnaltae,* subspec. nov. **421.** *C.* (s. str.) *rotundicolle,* spec. nov. **422.** *C.* (s. str.) *obscurum* (Castelnau). **423.** *C.* (s. str.) *subopacum* (Macleay). Lengths: 6.3 mm; 7.0 mm; 7.3 mm; 6.3 mm; 6.8 mm; 7.3 mm.



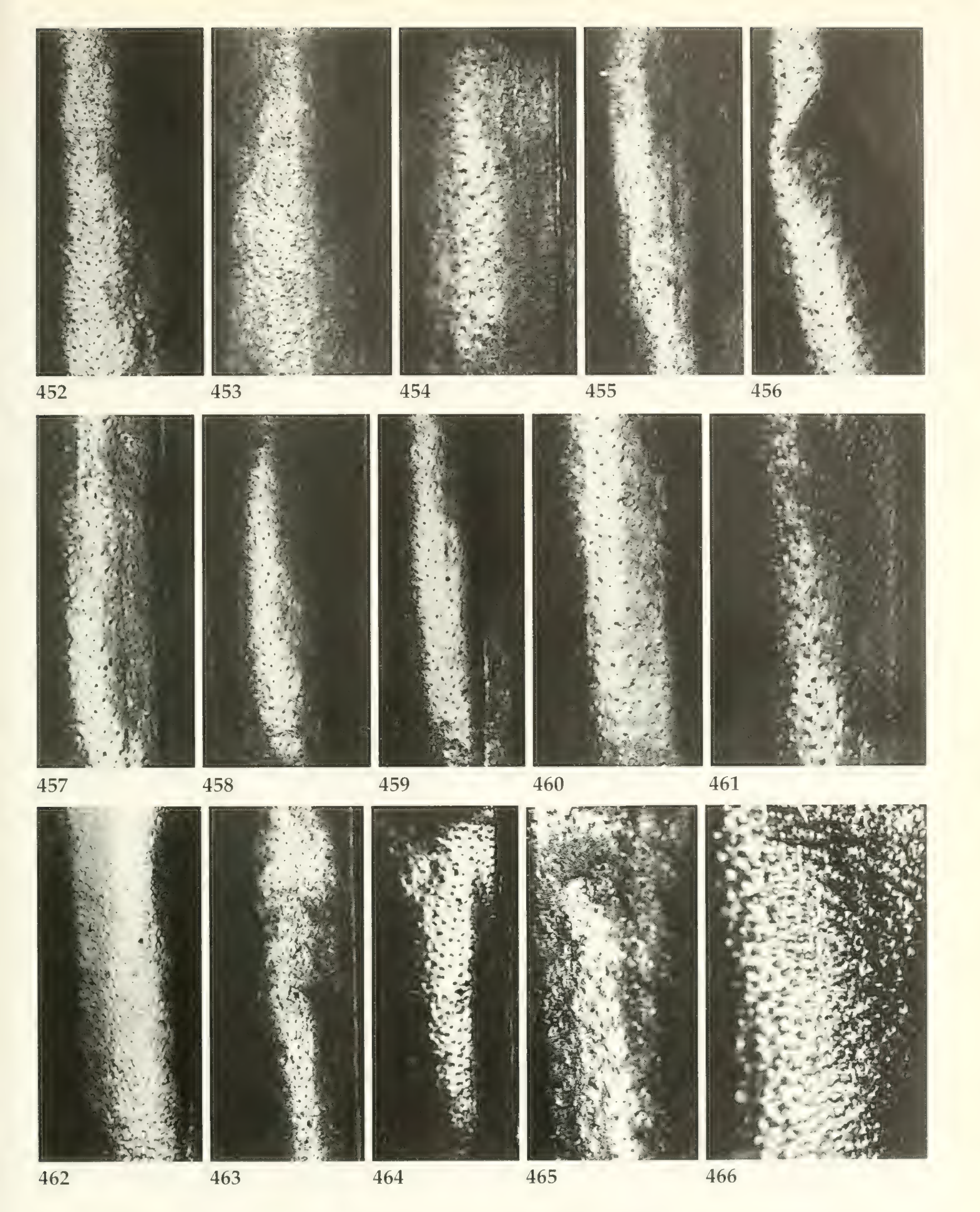
Figs 424-430. Habitus. **424.** *Cainogenion* (s. str.) *interiore*, spec. nov. **425.** *C.* (s. str.) *parumpilosum*, spec. nov. **426.** *C.* (s. str.) *tropicum*, spec. nov. **427.** *C.* (s. str.) *glabratum*, spec. nov. **428.** *C.* (s. str.) *depressum*, spec. nov. **429.** *C.* (s. str.) *clypeale*, spec. nov. **430.** *Paussotropus cylindricus* (Chaudoir). Lengths: 6.4 mm; 5.95 mm; 6.2 mm; 6.7 mm; 6.6 mm; 6.0 mm; 5.9 mm.



Figs 431-436. Habitus. **431.** *Cryptocephalomorpha gaverei* (Ritsema). **432.** *C. genieri*, spec. nov. **433.** *C. collaris* (Waterhouse). **434.** *C. maior*, spec. nov. **435.** *C. papua* Darlington. **436.** *C. australica*, spec. nov. Lengths: 4.2 mm; 4.1 mm; 3.95 mm; 4.4 mm; 3.0 mm; 3.5 mm.



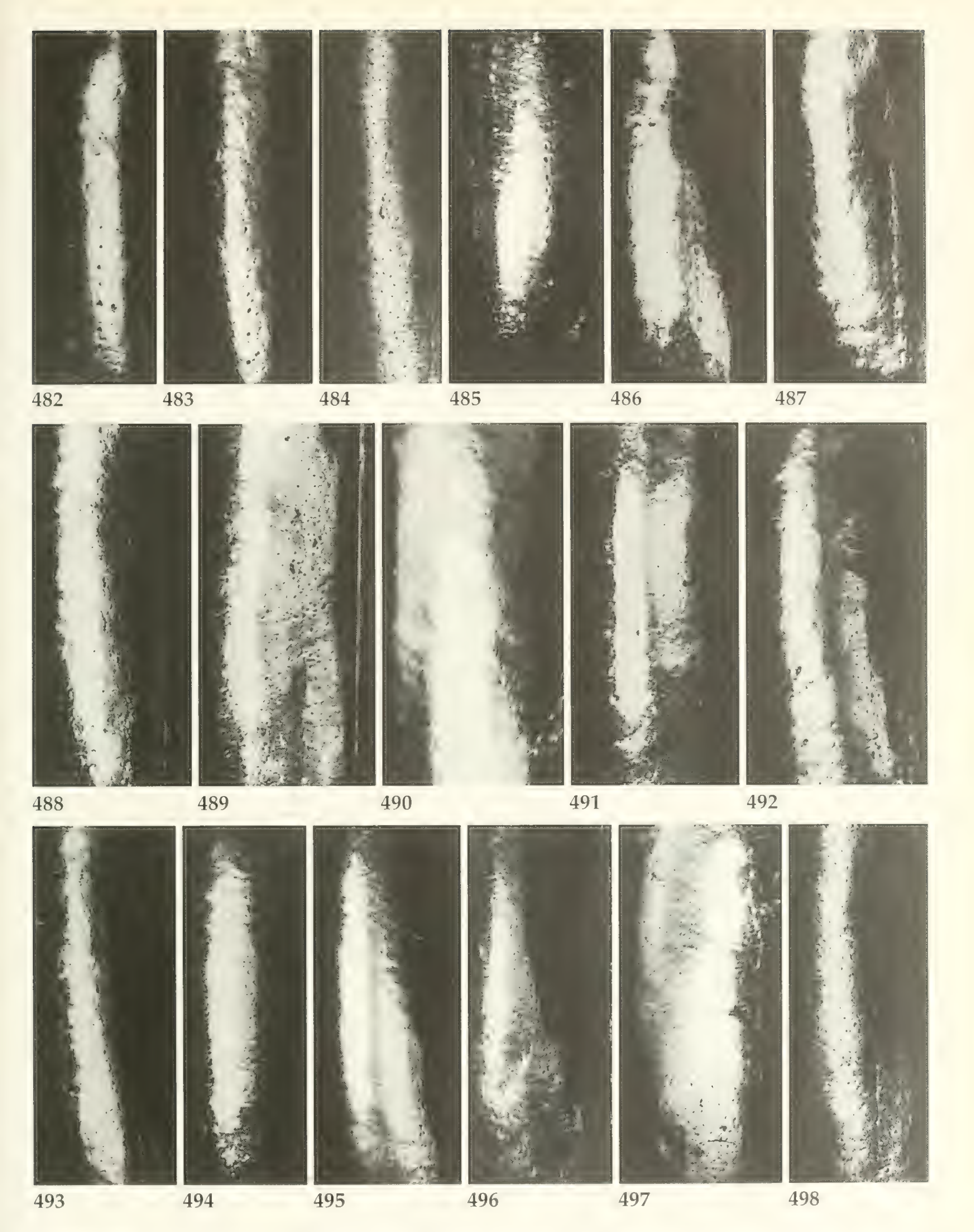
Figs 437-451. Striation and microsculpture of left elytron. Median part, if no additional information is given. **437.** *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane). **438.** *Adelotopus dytiscides* Newman. **439.** *A. ulrichi*, spec. nov. **440.** *A. ulrichi*, spec. nov., apex of elytra. **441.** *A. latior*, spec. nov. **442.** *A. latior*, spec. nov., apex of elytra. **443.** *A. apicalis* Macleay. **444.** *A. apicalis* Macleay., apex of elytra. **445.** *A. zborowskii*, spec. nov. **446.** *A. sericeus*, spec. nov. **447.** *A. howdenorum*, spec. nov. **448.** *A. katherinei*, spec. nov. **449.** *A. brevipennis* Macleay. **450.** *A. elongatulus* Macleay. **451.** *A. rufomarginatus*, spec. nov.



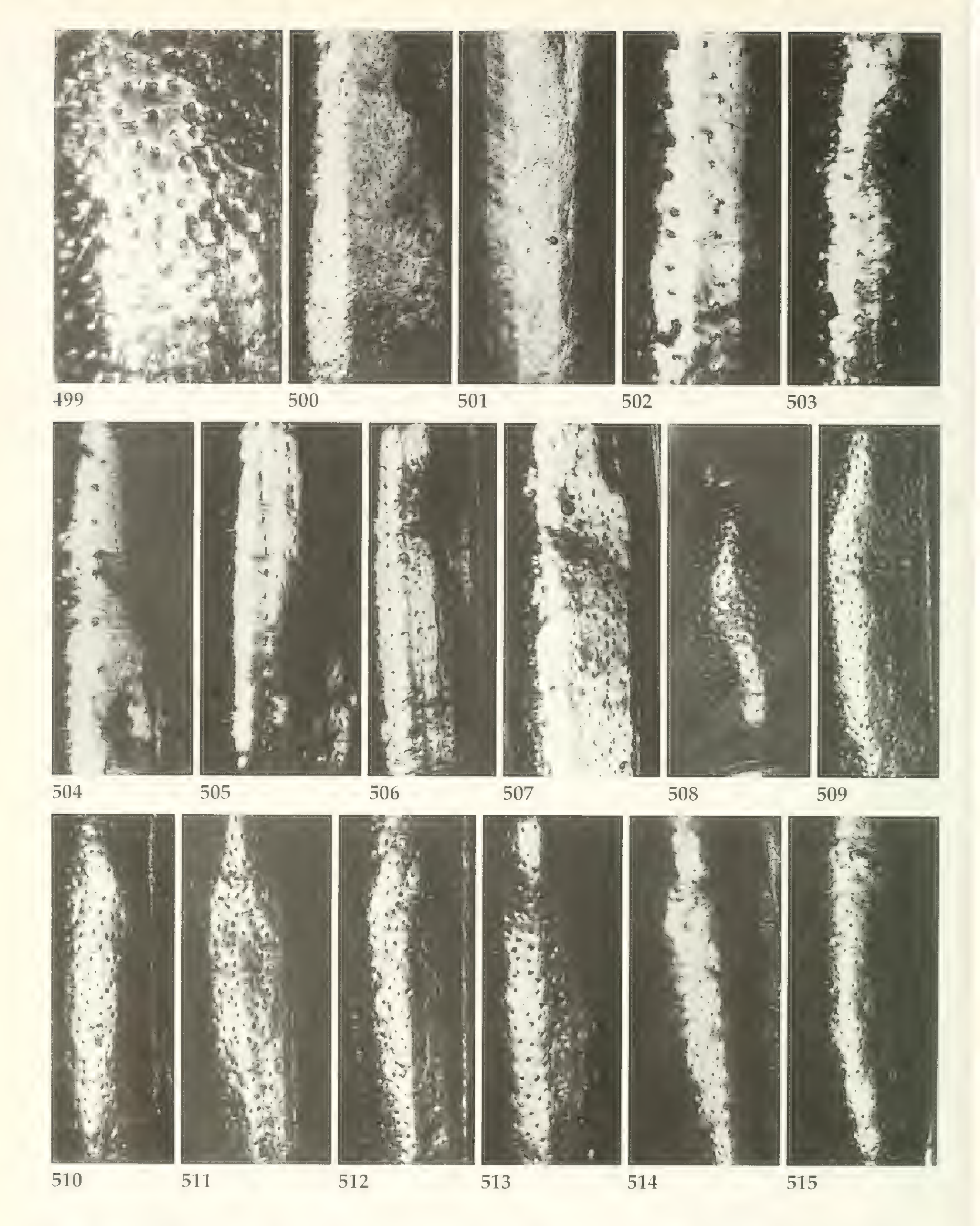
Figs 452-466. Striation and microsculpture of left elytron. Median part. **452.** *Adelotopus adelaideae*, spec. nov. **453.** *A. rufescens*, spec. nov. **454.** *A. flavus*, spec. nov. **455.** *A. piceus*, spec. nov. **456.** *A. longus longus*, spec. nov. **457.** *A. longus tropicus*, subspec. nov. **458.** *A. sinuaticollis sinuaticollis*, subspec. nov. **459.** *A. sinuaticollis calliope*, subspec. nov. **460.** *A. bamagae*, spec. nov. **461.** *A. rufozonatus*, spec. nov. **462.** *A. edithae*, spec. nov. **463.** *A. atrorufus*, spec. nov. **464.** *A. marginicollis*, spec. nov. **465.** *A. coriaceus*, spec. nov. **466.** *A. seminitidus*, spec. nov.



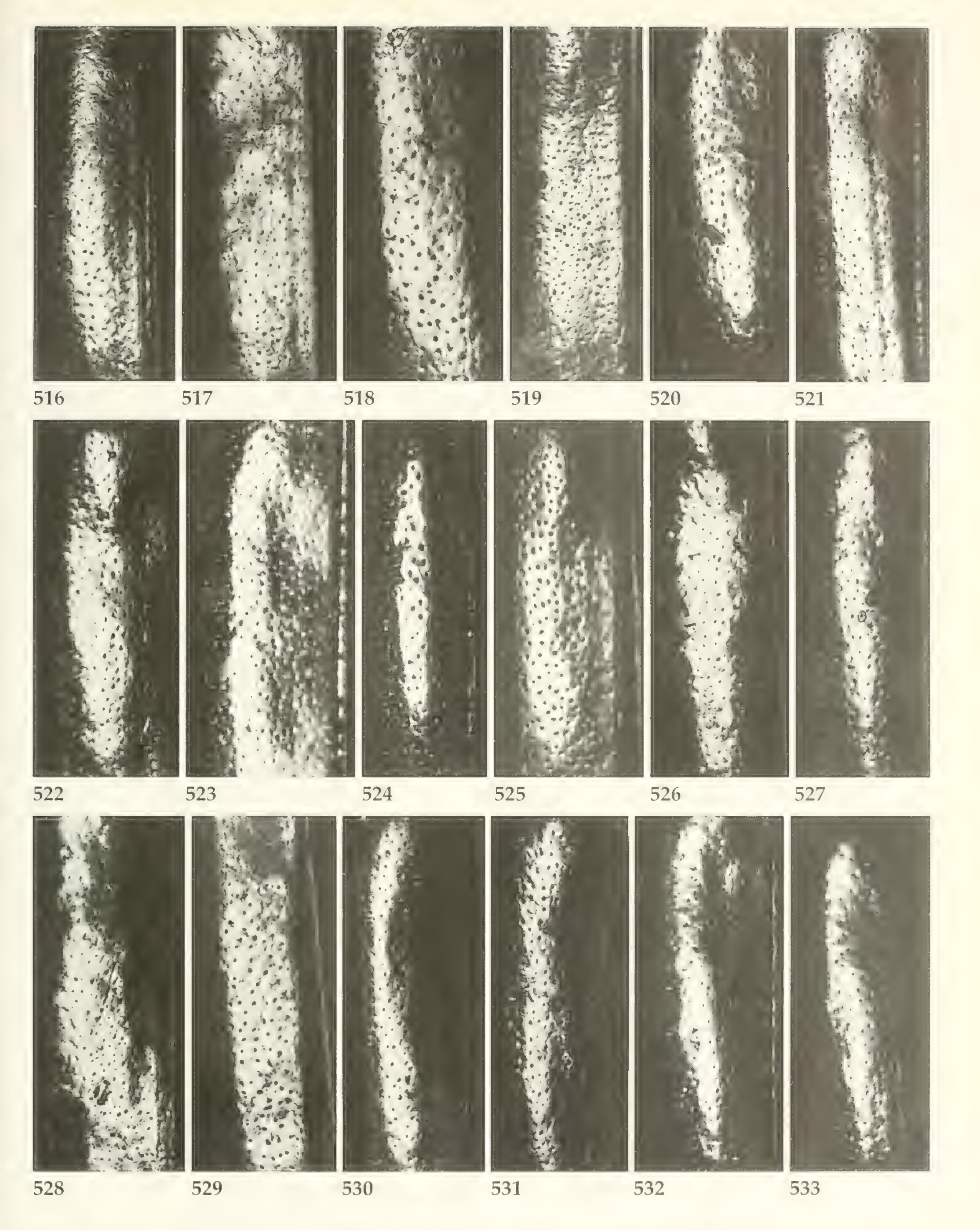
Figs 467-481. Striation and microsculpture of left elytron. Median part. **467.** *Adelotopus exactor* Darlington. **468.** *A. politus* Castelnau. **469.** *A. variolosus* Lea. **470.** *A. aterrimus*, spec. nov. **471.** *A. doyeni*, spec. nov. **472.** *A. substriatus*, spec. nov. **473.** *A. sedlaceki*, spec. nov. **474.** *A. caniae*, spec. nov. **475.** *A. rufocaudatus*, spec. nov. **476.** *A. haemorrhoidalis* Erichson. **477.** *A. minor*, spec. nov. **478.** *A. nitens*, spec. nov. **479.** *A. sparsepunctatus*, spec. nov. **480.** *A. semilunatus*, spec. nov. **481.** *A. kurandae*, spec. nov.



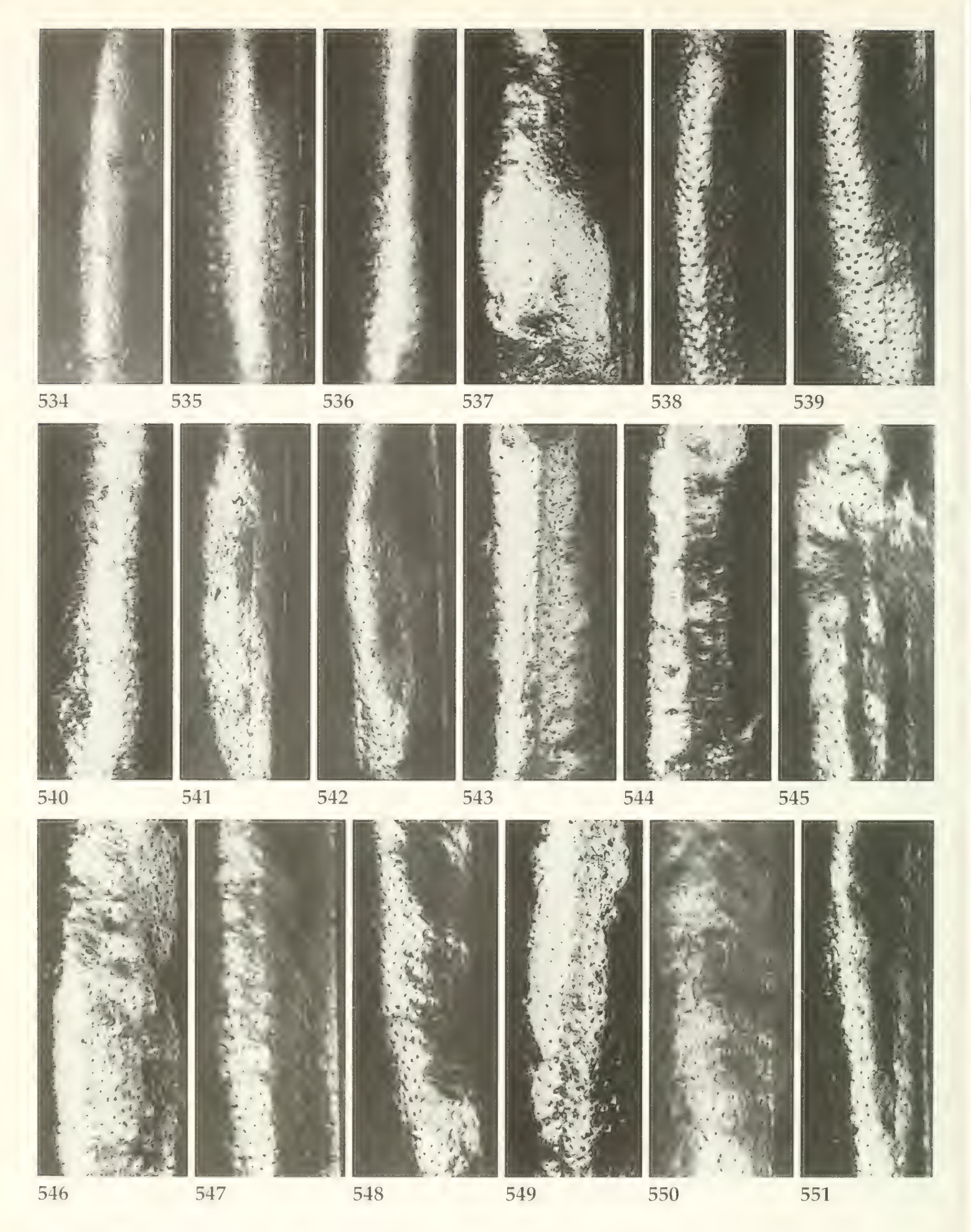
Figs 482-498. Striation and microsculpture of left elytron. Median part. **482.** *Adelotopus bimaculatus bimaculatus* Macleay. **483.** *A. bimaculatus angustior*, subspec. nov. **484.** *A. languidus*, spec. nov. **485.** *A. clepsydra*, spec. nov. **486.** *A. multipunctatus*, spec. nov. **487.** *A. ovatus*, spec. nov. **488.** *A. browni*, spec. nov. **489.** *A. jacobsoni* Ritsema. **490.** *A. geminus*, spec. nov. **491.** *A. laticaudatus*, spec. nov. **492.** *A. debitor* Darlington. **493.** *A. nitidior*, spec. nov. **494.** *A. yorkensis*, spec. nov. **495.** *A. convexicollis*, spec. nov. **496.** *A. gibbosus*, spec. nov. **497.** *A. penelopeae*, spec. nov. **498.** *A. obsoletus*, spec. nov.



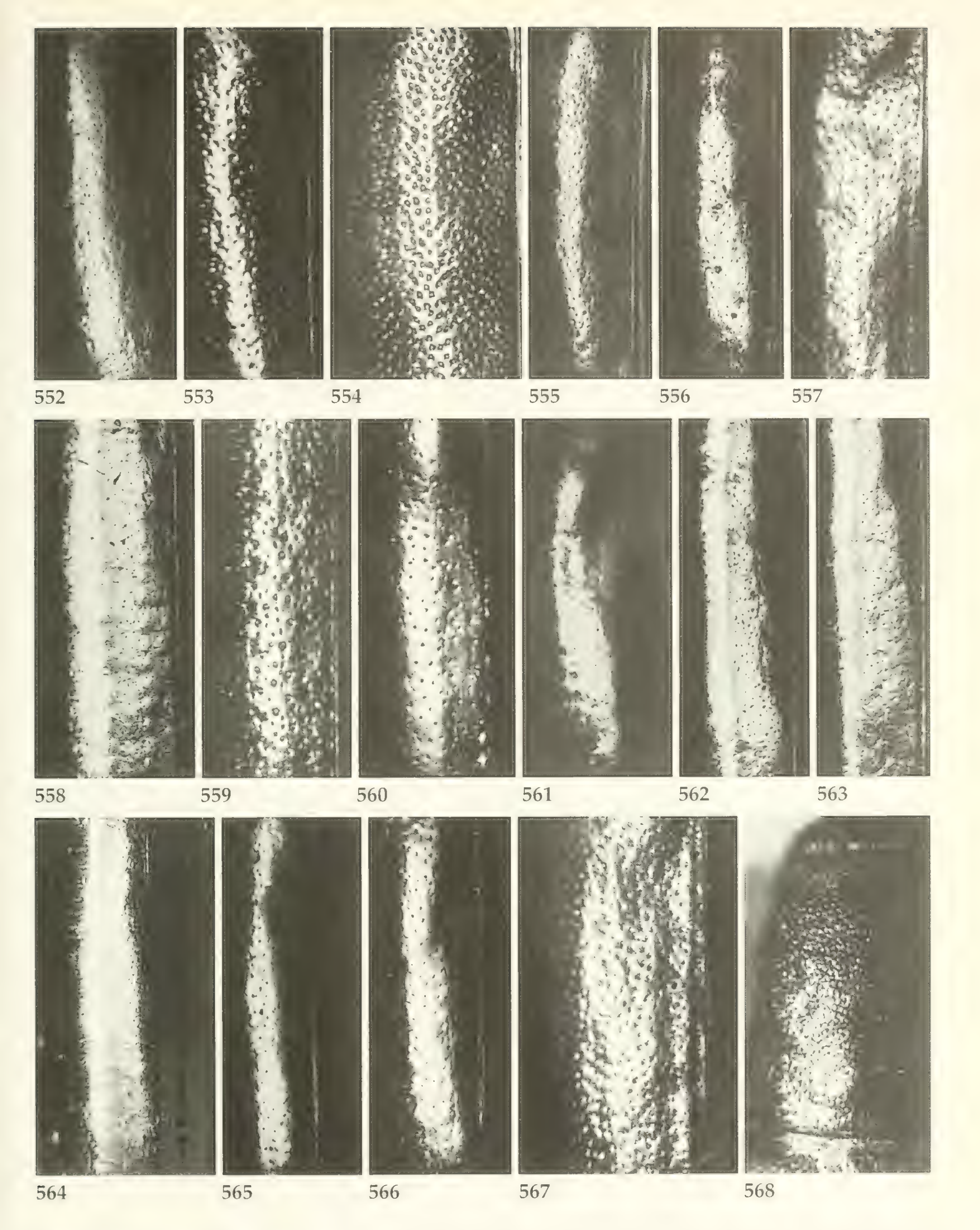
Figs 499-515. Striation and microsculpture of left elytron. Median part. **499.** *Adelotopus villosus,* spec. nov. **500.** *A. similis,* spec. nov. **501.** *A. tasmani* Blackburn. **502.** *A. seriepunctatus seriepunctatus* Notman. **503.** *A. seriepunctatus striatus,* subspec. nov. **504.** *A. convexus,* spec. nov. **505.** *A. calvus,* spec. nov. **506.** *A. montisatri,* spec. nov. **507.** *A. puncticollis puncticollis* Notman. **508.** *A. puncticollis angustemaculatus,* subspec. nov., left part of pronotum. **509.** *A. rubiginosus* Newman. **510.** *A. distinguendus,* spec. nov. **511.** *A. foliaceus,* spec. nov. **512.** *A. laticollis,* spec. nov. **513.** *A. cribricollis,* spec. nov. **514.** *A. luteus,* spec. nov. **515.** *A. houstoni,* spec. nov.



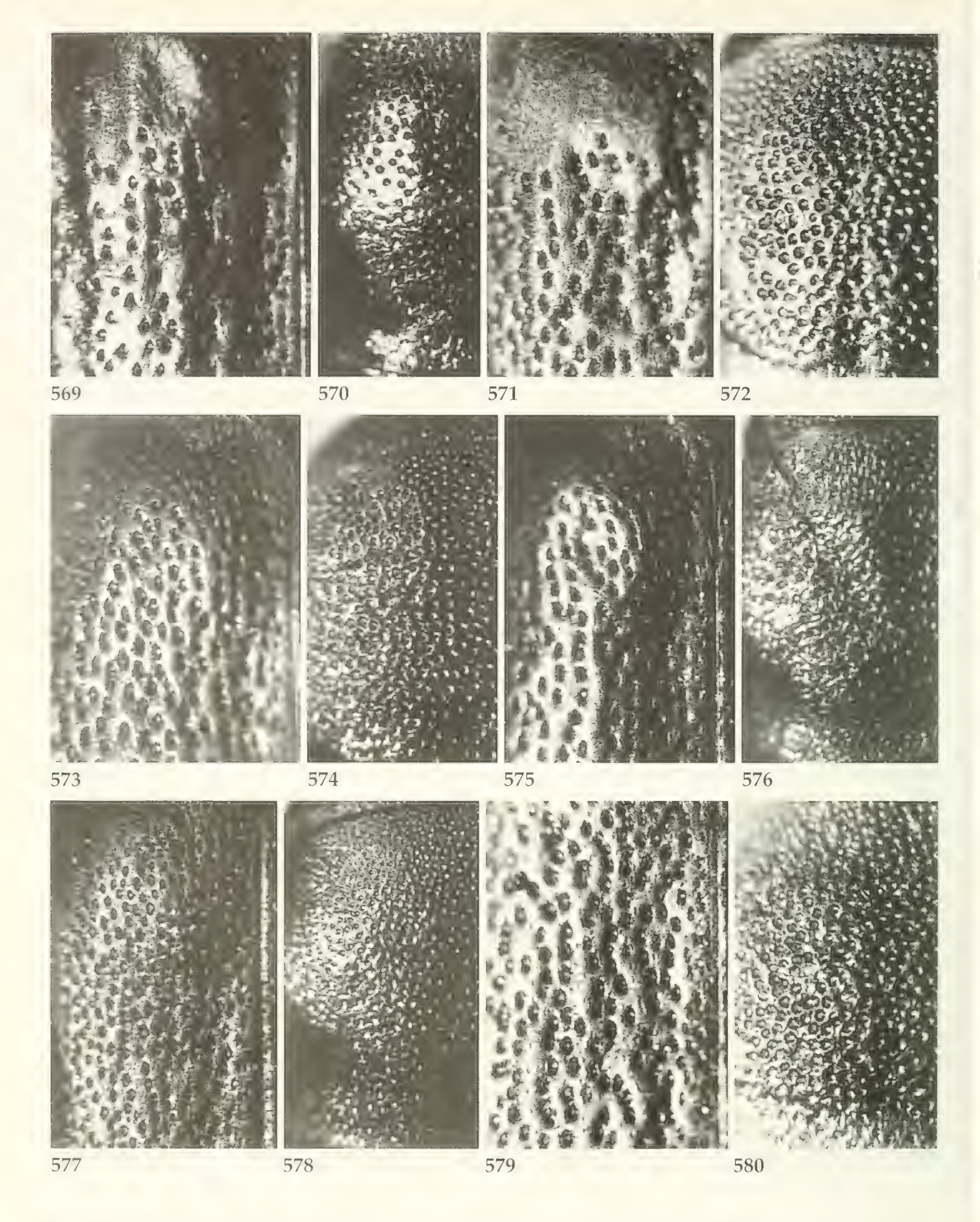
Figs 516-533. Striation and microsculpture of left elytron. Median part. **516.** *Adelotopus virgatus*, spec. nov. **517.** *A. brittoni*, spec. nov. **518.** *A. adustus*, spec. nov. **519.** *A. punctatissimus*, spec. nov. **520.** *A. queenslandicus*, spec. nov. **521.** *A. aequus*, spec. nov. **522.** *A. palumae*, spec. nov. **523.** *A. angustatus*, spec. nov. **524.** *A. flavescens*, spec. nov. **525.** *A. grossepunctatus*, spec. nov. **526.** *A. ooldeae*, spec. nov. **527.** *A. crucis*, spec. nov. **528.** *A. crassus*, spec. nov. **529.** *A. latipalpis*, spec. nov. **530.** *A. laevis* Macleay. **531.** *A. ciliatus ciliatus*, spec. nov. **532.** *A. ciliatus tenuipunctatus*, subspec. nov. **533.** *A. brevior*, spec. nov.



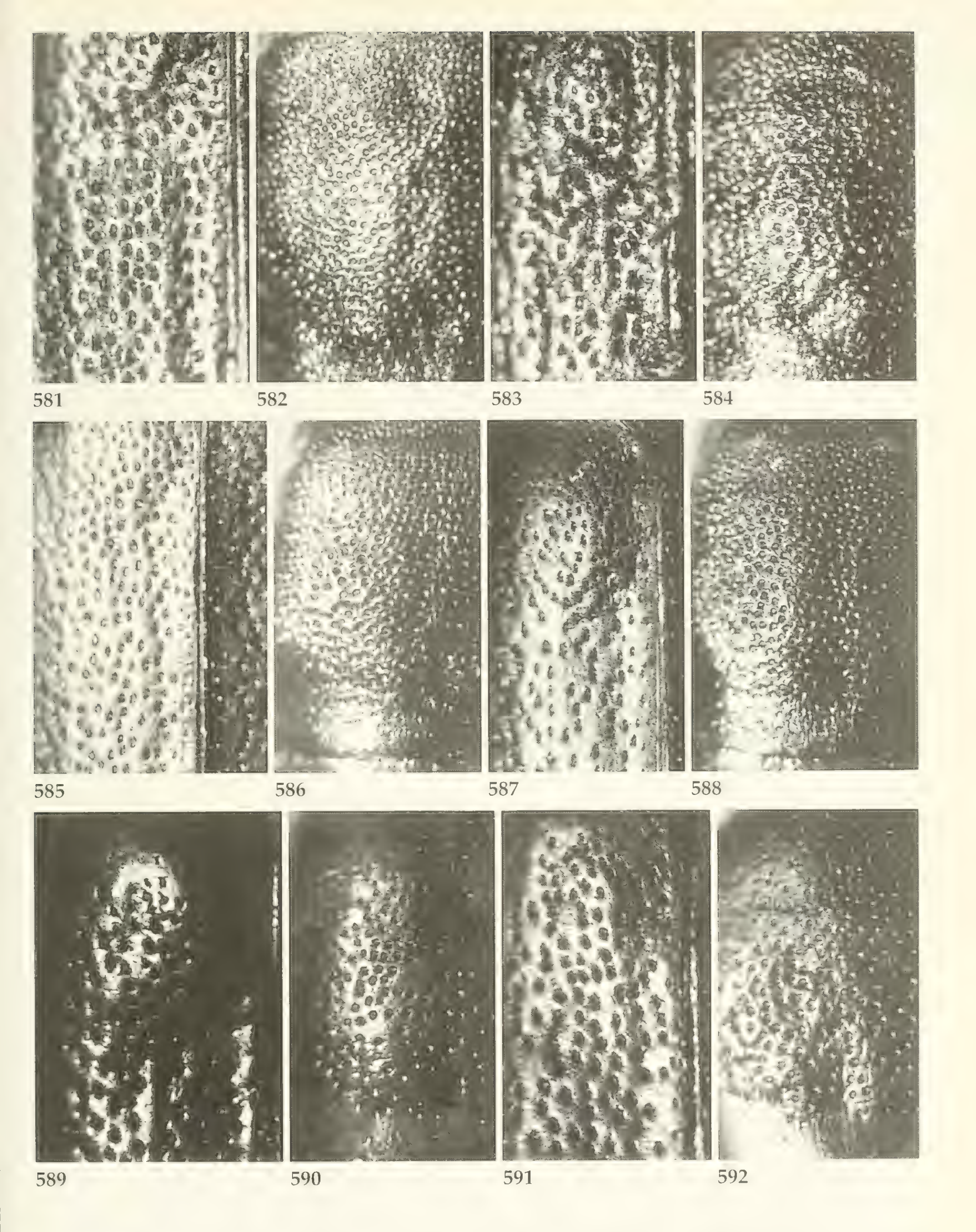
Figs 534-551. Striation and microsculpture of left elytron. Median part. **534.** *Adelotopus unicolor*, spec. nov. **535.** *A. linearis* Macleay. **536.** *A. bacillus*, spec. nov. **537.** *A. celeripes* Lea. **538.** *A. gyrinoides gyrinoides* Hope. **539.** *A. gyrinoides orientalis*, subspec. nov. **540.** *A. mainae*, spec. nov. **541.** *A. vicinus* Castelnau. **542.** *A. dubius dubius*, spec. nov. **543.** *A. dubius glaber*, subspec. nov. **544.** *A. dubius hobartensis*, subspec. nov. **545.** *A. montorum*, spec. nov. **546.** *A. lawrencei*, spec. nov. **547.** *A. victoriensis*, spec. nov. **548.** *A. murrayanus*, spec. nov. **549.** *A. parumpunctatus*, spec. nov. **550.** *A. lunatus*, spec. nov. **551.** *A. gippslandicus*, spec. nov.



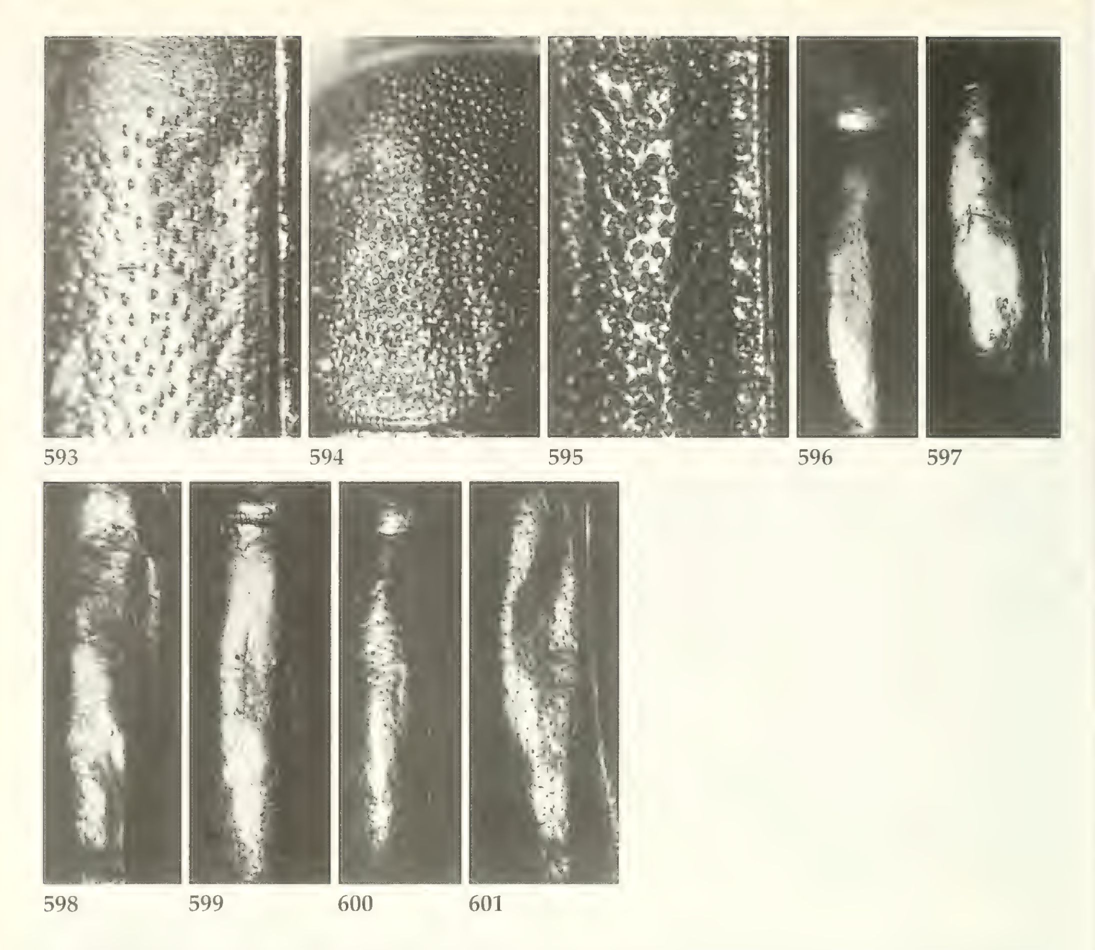
Figs 552-567. Striation and microsculpture of left elytron. Median part. **552.** *Adelotopus zonatus* Castelnau. **553.** *A. punctatus* Castelnau. **554.** *A. rufoguttatus* (Blackburn). **555.** *A. affinis* Castelnau. **556.** *A. basirufus*, spec. nov. **557.** *A. macilentus*, spec. nov. **558.** *A. punctulifer*, spec. nov. **559.** *A. analis* Macleay. **560.** *A. paroensis* Castelnau. **561.** *A. fasciatus* Castelnau. **562.** *A. nemosomoides* Westwood. **563.** *A. longiformis*, spec. nov. **564.** *A. conicollis*, spec. nov. **565.** *A. maculipennis* Macleay. **566.** *A. cuneatus*, spec. nov. **567.** *Cainogenion (Procainogenion) ephippiatum* (Newman).
Fig. 568. *C. (Procainogenion) ephippiatum* (Newman), microsculpture of pronotum, left side.



Figs 569-580. Striation and microsculpture of left elytron and left side of pronotum. **569-570.** *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood). **569.** Elytron. **570.** Pronotum. **571-572.** *C.* (s. str.) *ipsoides occidentale,* subspec. nov. **571.** Elytron. **572.** Pronotum. **573-574.** *C.* (s. str.) *creberrimum creberrimum* (Blackburn). **573.** Elytron. **574.** Pronotum. **575-576.** *C.* (s. str.) *creberrimum gualtae,* subspec. nov. **575.** Elytron. **576.** Pronotum. **577-578.** *C.* (s. str.) *rotundicolle,* spec. nov. **577.** Elytron. **578.** Pronotum. **579-580.** *C.* (s. str.) *obscurum* (Castelnau). **579.** Elytron. **580.** Pronotum.

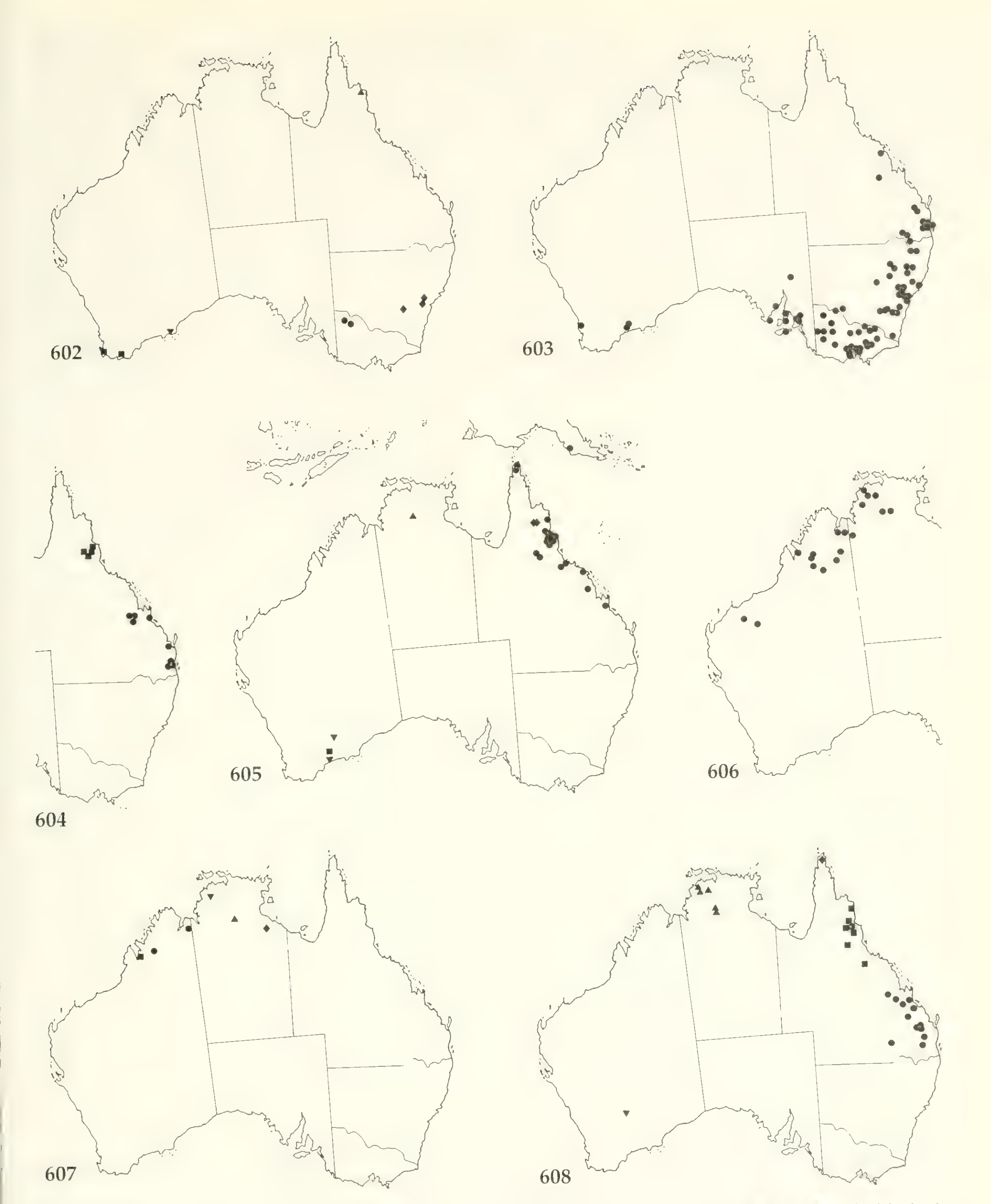


Figs 581-592. Striation and microsculpture of left elytron and left side of pronotum. **581-582.** *Cainogenion* (s. str.) *subopacum* (Macleay). **581.** Elytron. **582.** Pronotum. **583-584.** *C.* (s. str.) *interiore*, spec. nov. **583.** Elytron. **584.** Pronotum. **585-586.** *C.* (s. str.) *parumpilosum*, spec. nov. **585.** Elytron. **586.** Pronotum. **587-588.** *C.* (s. str.) *tropicum*, spec. nov. **587.** Elytron. **588.** Pronotum. **589-590.** *C.* (s. str.) *glabratum*, spec. nov. **589.** Elytron. **590.** Pronotum. **591-592.** *C.* (s. str.) *depressum*, spec. nov. **591.** Elytron. **592.** Pronotum.



Figs 593-594. *Cainogenion* (s. str.) *clypeale*, spec. nov. Striation and microsculpture of left elytron and left side of pronotum. **593.** Elytron. **594.** Pronotum.

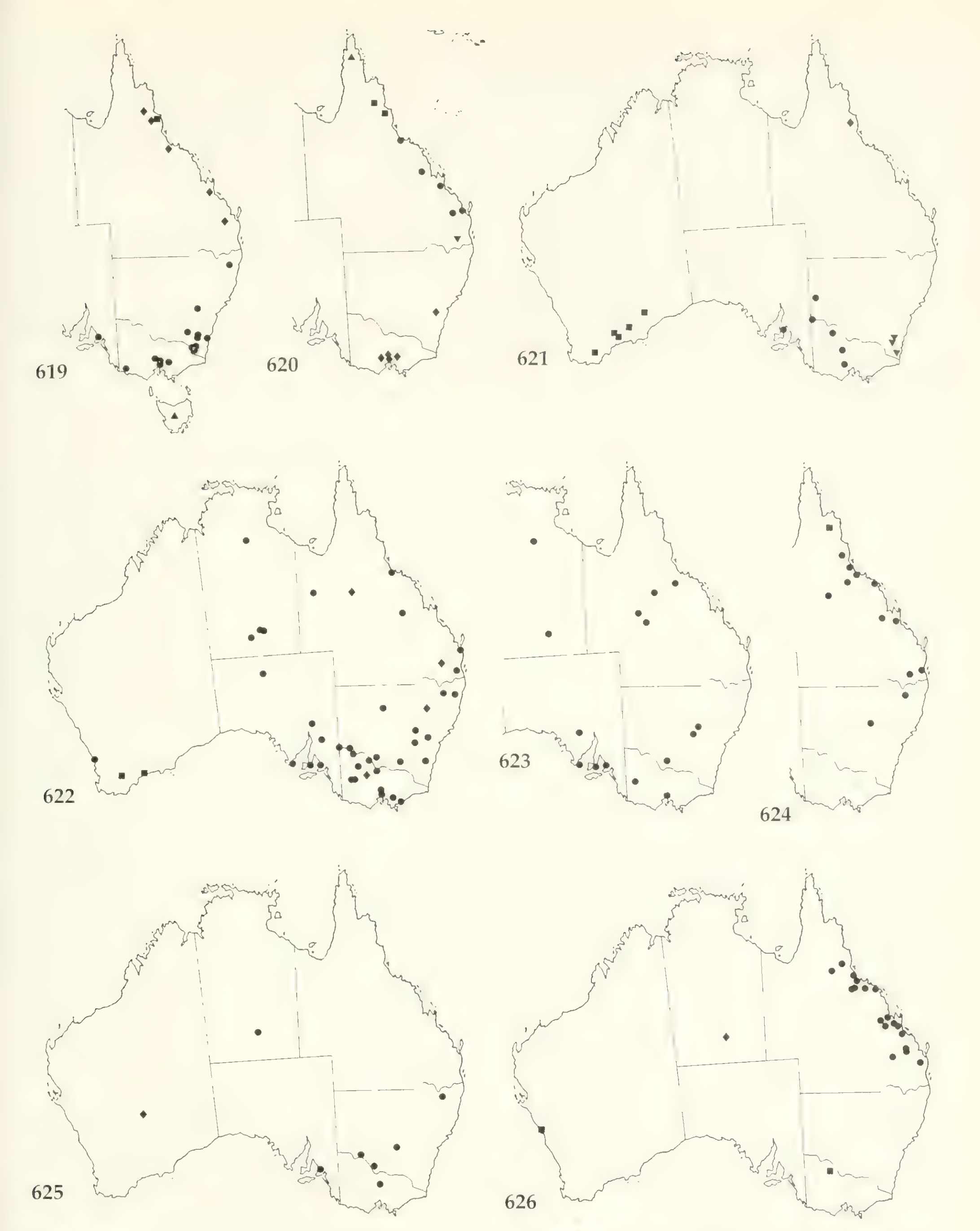
Figs 595-601. Striation and microsculpture of left elytron. Median part. **595.** *Paussotropus cylindricus* (Chaudoir). **596.** *Cryptocephalomorpha gaverei* Ritsema. **597.** *C. genieri*, spec. nov. **598.** *C. collaris* (Waterhouse). **599.** *C. maior*, spec. nov. **600.** *C. papua* Darlington. **601.** *C. australica*, spec. nov.



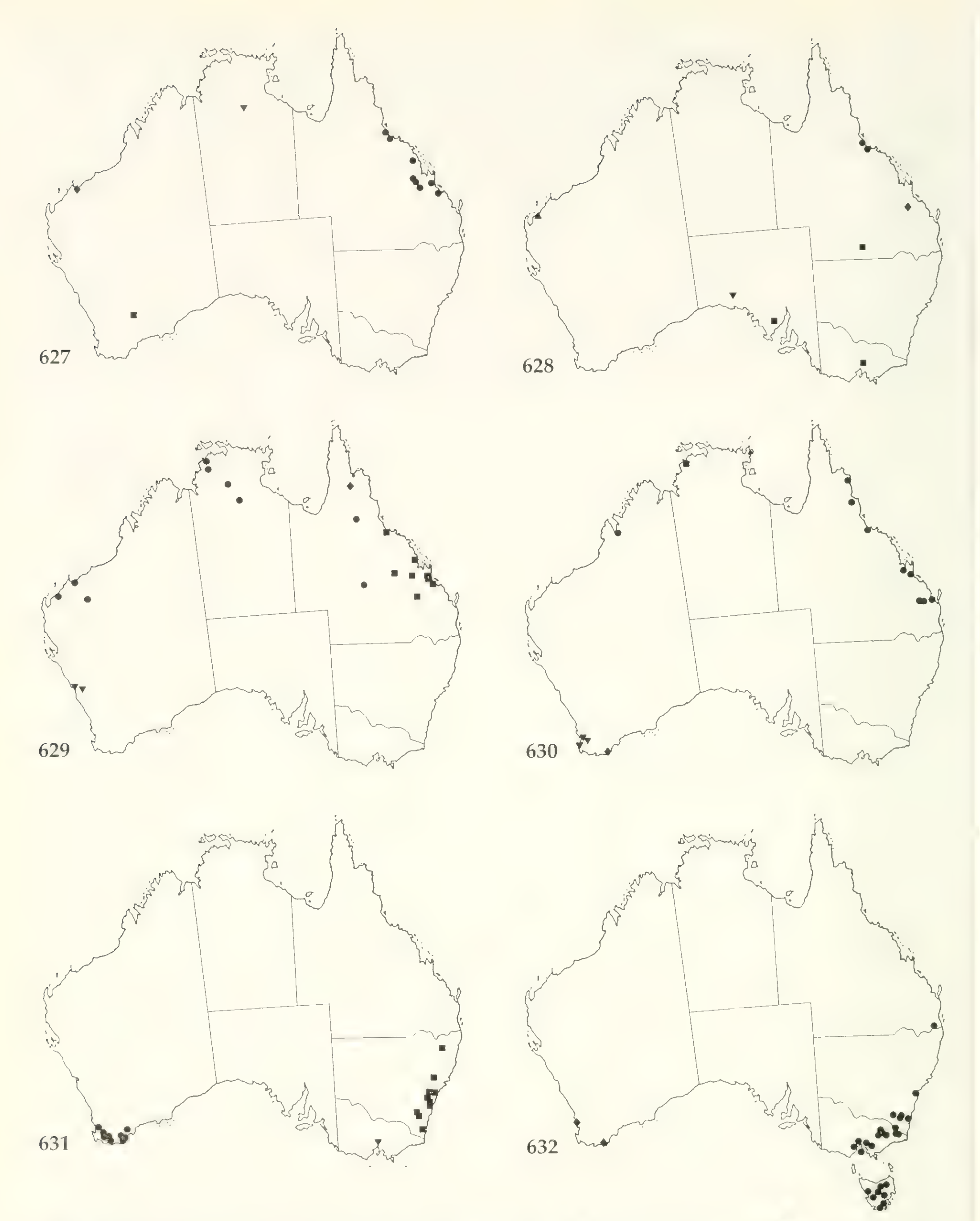
Figs 602-608. Distributions. **602.** *Pseudomorpha (Austropseudomorpha) insignis insignis* (Sloane): ●; *P. (A.) insignis pilosa*, subspec. nov.: ◆; *P. (A.) subangulata*, spec. nov.: ▼; *P. (A.) brevis*, spec. nov.: ■; *Cryptocephalomorpha australica*, spec. nov.: ▲. **603.** *Adelotopus dytiscides* Newman. **604.** *A. ulrichi*, spec. nov.: ●; *A. latior*, spec. nov.: ■. **605.** *A. apicalis* Macleay: ●; *A. zborowskii*, spec. nov.: ◆; *A. sericeus*, spec. nov.: ■; *A. howdenorum*, spec. nov.: ▼; *A. katherinei*, spec. nov.: ▲. **606.** *A. brevipennis* Macleay. **607.** *A. elongatulus* Macleay: ■; *A. rufomarginatus*, spec. nov.: ◆; *A. adelaideae*, spec. nov.: ▼; *A. rufescens*, spec. nov.: ●; *A. flavus*, spec. nov.: ▲. **608.** *A. piceus*, spec. nov.: ▼; *A. longus longus*, spec. nov.: ●; *A. longus tropicus*, subspec. nov.: ■; *A. bamagae*, spec. nov.: ◆; *A. rufozonatus*, spec. nov.: ▲.



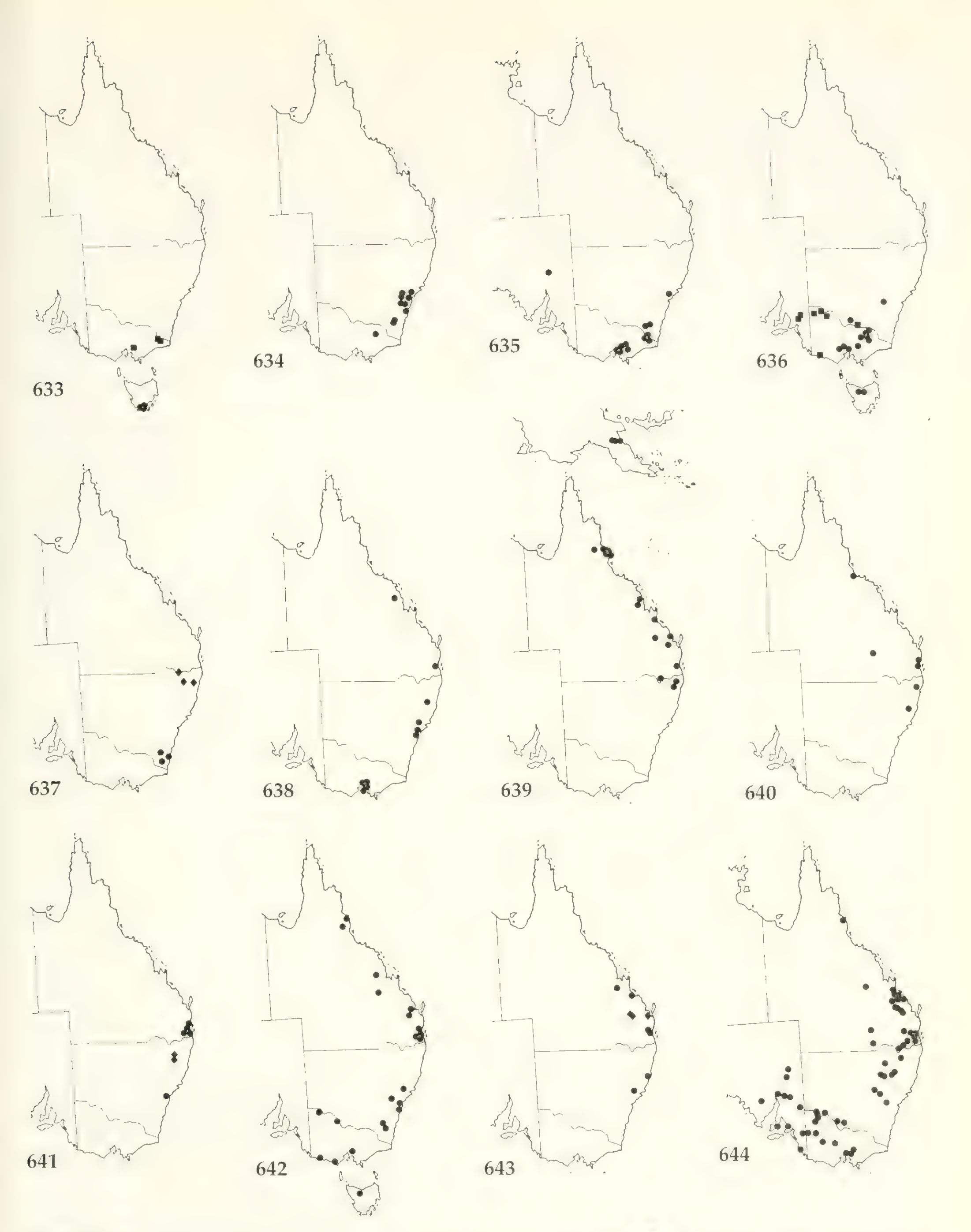
Figs 609-618. Distributions. **609.** *Adelotopus sinuaticollis sinuaticollis*, spec. nov.: ●; *A. sinuaticollis calliope*, subspec. nov.: ■; *A. edithae*, spec. nov.: ▼; *A. atrorufus*, spec. nov.: ♦. **610.** *A. marginicollis*, spec. nov.: ■; *A. coriaceus*, spec. nov.: ▼; *A. seminitidus*, spec. nov.: ▲; *A. exactor* Darlington: ♦; *A. politus* Castelnau: ●. **611.** *A. variolosus* Lea: ■; *A. aterrimus*, spec. nov.: ♦; *A. doyeni*, spec. nov.: ●; *A. sedlaceki*, spec. nov.: ▼. **612.** *A. substriatus*, spec. nov.: ●; *A. caniae*, spec. nov.: ■; *A. rufocaudatus*, spec. nov.: ♦; **613.** *A. haemorrhoidalis* Erichson: ●; *A. kurandae*, spec. nov.: ♦. **614.** *A. minor*, spec. nov.: ♦; *A. nitens*, spec. nov.: ■; *A. sparsepunctatus*, spec. nov.: ●. **615.** *A. bimaculatus bimaculatus* Macleay (typical specimens): ♦; *A. bimaculatus bimaculatus* Macleay (intermediate specimens): ●; *A. bimaculatus angustior*, subspec. nov.: ■. **616.** *A. languidus*, spec. nov.: ●; *A. multipunctatus*, spec. nov.: ■; *A. ovatus*, spec. nov.: ♦. **617.** *A. browni*, spec. nov.: ♦; *A. geminus*, spec. nov.: ■; *A. laticaudatus*, spec. nov.: ▲. **618.** *A. debitor* Darlington: ♦; *A. nitidior*, spec. nov.: ●; *A. yorkensis*, spec. nov.: ■; *A. convexicollis*, spec. nov.: ▼.



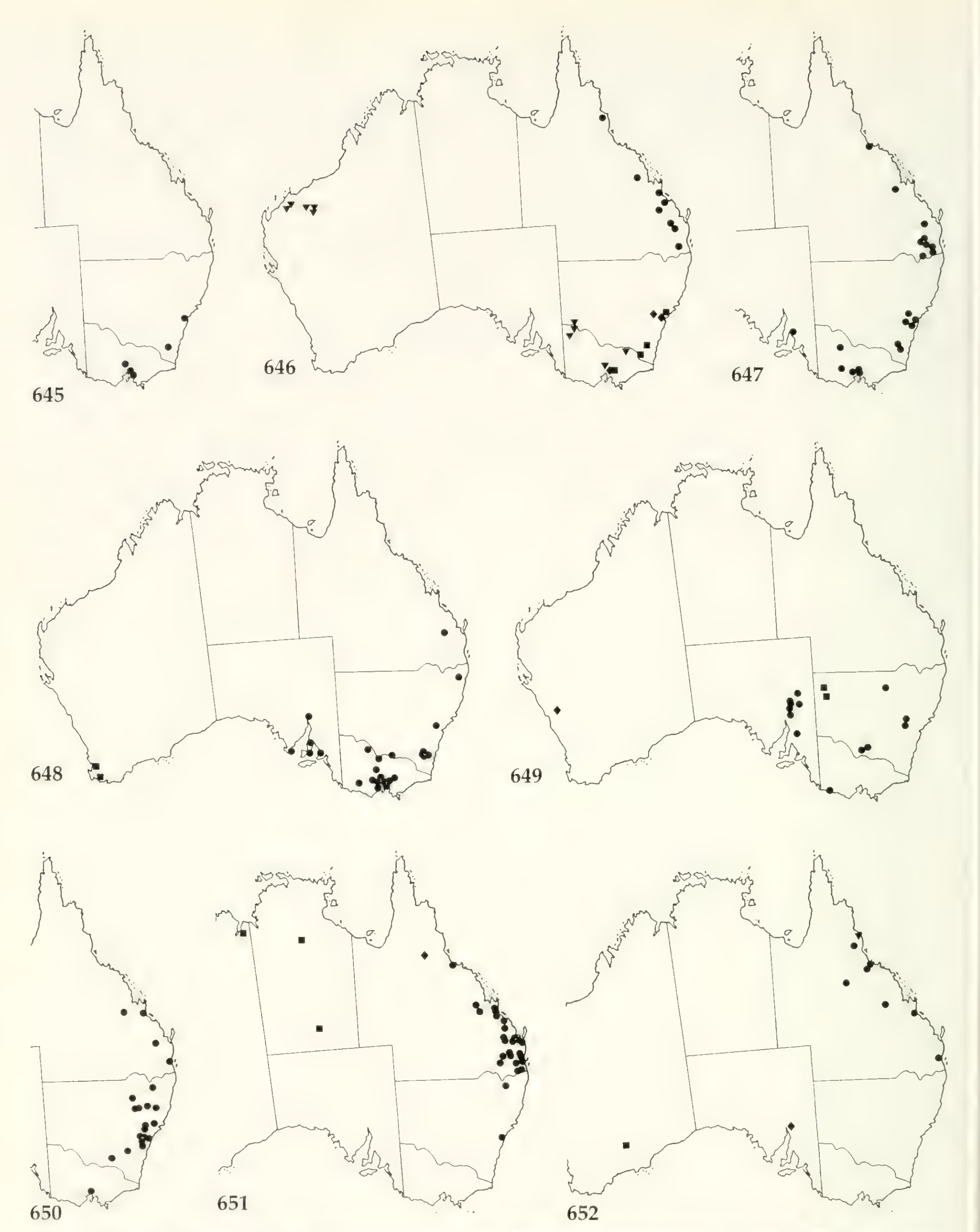
Figs 619-626. Distributions. **619.** *Adelotopus gibbosus*, spec. nov.: ■; *A. obsoletus*, spec. nov.: ♦; *A. similis*, spec. nov.: ●; *A. tasmani* Blackburn: ▲. **620.** *A. villosus*, spec. nov.: ■; *A. nigricauda*, spec. nov.: ▲; *A. seriepunctatus seriepunctatus* Notman: ♦; *A. seriepunctatus striatus*, subspec. nov.: ●; *A. convexus*, spec. nov.: ▼. **621.** *A. calvus*, spec. nov.: ♦; *A. montisatri*, spec. nov.: ▼; *A. puncticollis puncticollis* Notman: ●; *A. puncticollis angustemaculatus*, subspec. nov.: ■. **622.** *A. rubiginosus* Newman: ●; *A. distinguendus*, spec. nov.: ■; *A. foliaceus*, spec. nov.: ♦. **623.** *A. laticollis*, spec. nov. **624.** *A. cribricollis*, spec. nov.: ●; *A. luteus*, spec. nov.: ■. **625.** *A. houstoni*, spec. nov.: ♦; *A. virgatus*, spec. nov.: ●. **626.** *A. brittoni*, spec. nov.: ♦; *A. adustus*, spec. nov.: ■; *A. queenslandicus*, spec. nov.: ●.



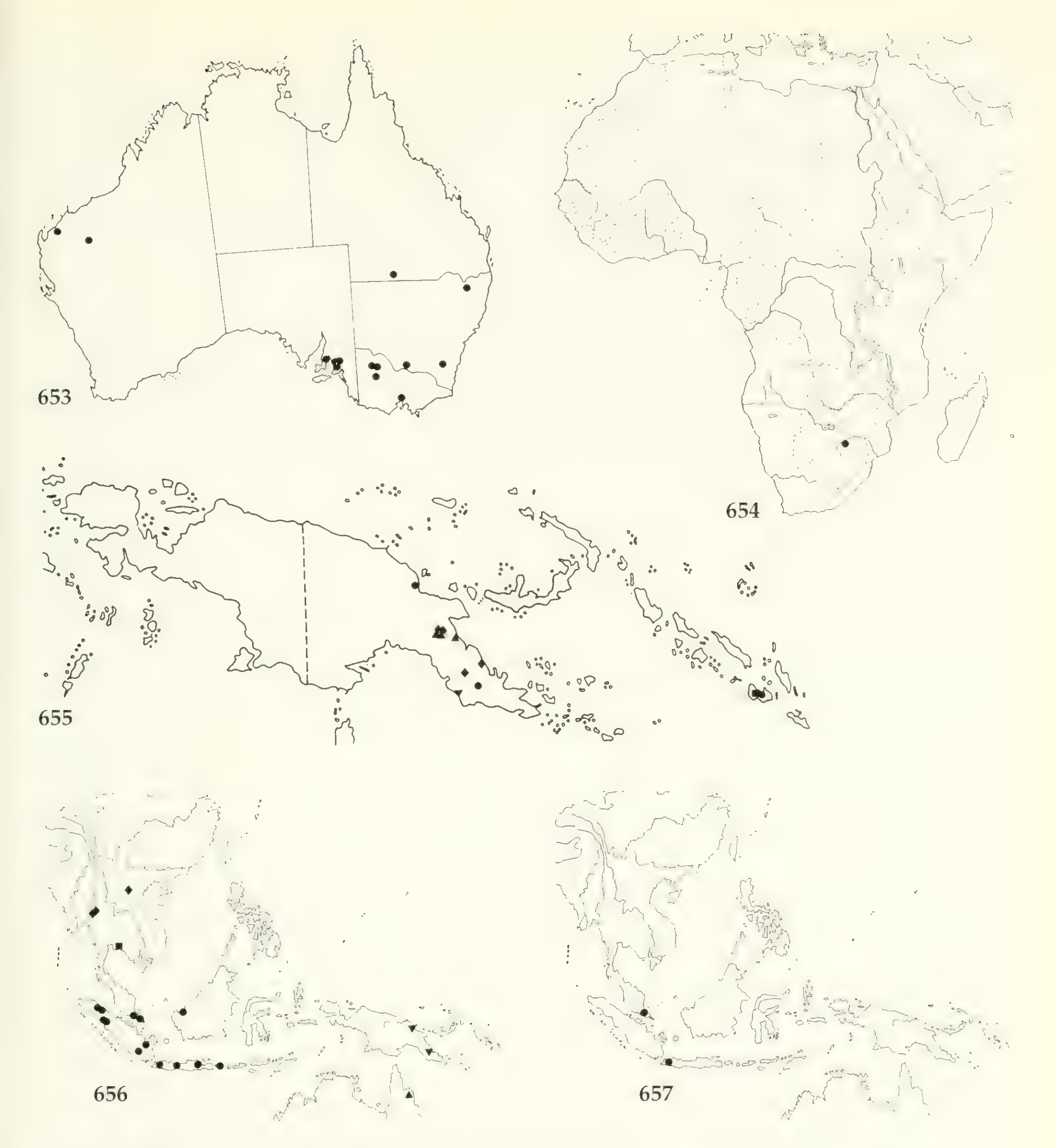
Figs 627-632. Distributions. **627.** *Adelotopus aequus,* spec. nov.: ●; *A. crucis,* spec. nov.: ■; *A. crassus,* spec. nov.: ♦; *A. latipalpis,* spec. nov.: ▼. **628.** *A. palumae,* spec. nov.: ●; *A. angustatus,* spec. nov.: ♦; *A. flavescens,* spec. nov.: ■; *A. grossepunctatus,* spec. nov.: ▲; *A. ooldeae,* spec. nov.: ▼. **629.** *A. laevis* Macleay: ●; *A. ciliatus ciliatus,* spec. nov.: ■; *A. ciliatus tenuipunctatus,* subspec. nov.: ♦; *A. brevior,* spec. nov.: ▼. **630.** *A. unicolor,* spec. nov.: ♦; *A. linearis* Macleay: ●; *A. bacillus,* spec. nov.: ■; *A. celeripes* Lea: ▼. **631.** *A. gyrinoides gyrinoides* Hope: ●; *A. gyrinoides orientalis,* subspec. nov.: ▼; *A. vicinus* Castelnau: ■. **632.** *A. mainae,* spec. nov.: ♦; *A. dubius dubius,* spec. nov.: ●.



Figs 633-644. Distributions. **633.** *Adelotopus dubius glaber*, subspec. nov.: ■; *A. dubius hobartensis*, subspec. nov.: ●. **634.** *A. montorum*, spec. nov. **635.** *A. lawrencei*, spec. nov. **636.** *A. victoriensis*, spec. nov.: ●; *A. murrayanus*, spec. nov.: ■. **637.** *A. parumpunctatus*, spec. nov.: ♦; *A. lunatus*, spec. nov.: ●. **638.** *A. zonatus* Castelnau. **639.** *A. rufoguttatus* (Blackburn). **640.** *A. punctatus* Castelnau. **641.** *A. affinis* Castelnau: ●; *A. basirufus*, spec. nov.: ♦. **642.** *Adelotopus macilentus*, spec. nov. **643.** *Adelotopus punctulifer*, spec. nov.: ●; *A. analis* Macleay: ♦. **644.** *Adelotopus paroensis* Castelnau.



Figs 645-652. Distributions. **645.** *Adelotopus fasciatus* Castelnau. **646.** *A. nemosomoides* Westwood: ■; *A. longiformis*, spec. nov.: ♦; *A. maculipennis* Macleay: ●; *A. cuneatus*, spec. nov.: ▼. **647.** *Cainogenion (Procainogenion) ephippiatum* (Newman). **648.** *Cainogenion* (s. str.) *ipsoides ipsoides* (Westwood): ●; *C.* (s. str.) *ipsoides occidentale*, subspec. nov.: ■. **649.** C. (s. str.) *creberrimum creberrimum* (Blackburn): ●; C. (s. str.) *creberrimum gnaltae*, subspec. nov.: ■; C. (s. str.) *rotundicolle*, spec. nov.: ♦. **650.** C. (s. str.) *obscurum* (Castelnau). **651.** C. (s. str.) *subopacum* (Macleay): ●; C. (s. str.) *interiore*, spec. nov.: ■; C. (s. str.) *parumpilosum*, spec. nov.: ♦. **652.** C. (s. str.) *tropicum*, spec. nov.: ●; C. (s. str.) *glabratum*, spec. nov.: ♦; C. (s. str.) *depressum*, spec. nov.: ■; C. (s. str.) *clypeale*, spec. nov.: ▼.



Figs 653-657. Distributions. **653.** *Paussotropus cylindricus* (Chaudoir). **654.** *Cryptocephalomorpha genieri*, spec. nov. **655.** *Adelotopus apicalis* Macleay: ▼; *A debitor* Darlington: ♦; *A. penelopeae*, spec. nov.: ■; *A. rufoguttatus* (Blackburn): ▲; *Cryptocephalomorpha papua* Darlington: ●. **656.** *Cryptocephalomorpha gaverei* Ritsema: ●; *C. collaris* (Waterhouse): ■; *C. maior*, spec. nov.: ♦; *C. papua* Darlington: ▼; *C. australica*, spec. nov.: ▲. **657.** *Adelotopus jacobsoni* Ritsema.

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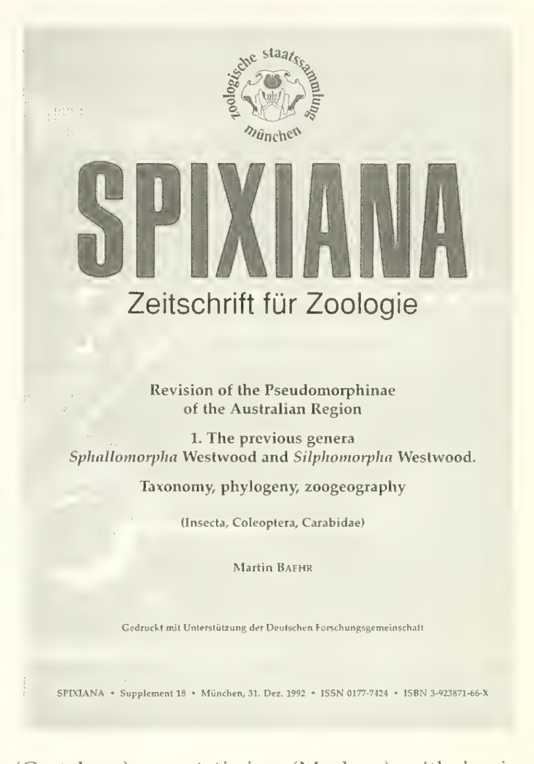
14. Alphabetical checklist of genera, subgenera, and species

Valid species with synonyms; synonyms indented

15. Checklist of the species-groups of the genus *Adelotopus* with the included species

The 1st part of the general revision of the Pseudomorphinae of the Australian Region was published in SPIXIANA Supplement 18, 1992, It contains the revision of the former genera *Silphomorpha* Westwood and *Sphallomorpha* Westwood that were united under the name *Sphallomorpha*. For getting more comprehensive information about the Australasian Pseudomorphinae, the complete abstract is reproduced below.

Baehr, M. (1992): Revision of the Pseudomorphinae of the Australian Region 1. The previous genera *Sphallomorpha* Westwood and *Silphomorpha* Westwood. Taxonomy, phylogeny, zoogeography (Insecta, Coleoptera, Carabidae). – Spixiana Suppl. **18:** 1-440



As a first part of a general revision of the Pseudomorphinae of the Australian Region the previous genera *Sphallomorpha* Westwood and *Silphomorpha* Westwood are revised. Both names are synonymized, because there is no general distinctive character suitable for the separation of the genera. Hence all species previously included in *Silphomorpha* are transferred *to Sphallomorpha*.

The 132 valid species and 1 subspecies are grouped into 40 species-groups each of which presumably represents a phylogenetic unit. Some groups, however, consist of a single species only, mainly because one sex is still unknown and exact grouping is therefore difficult. Keys are provided for the genera of Pseudomorphinae, the species-groups of genus *Sphallomorpha*, and for all species of *Sphallomorpha* apart from those remaining doubtful.

Following species names have been synonymized: *vicina* (Castelnau) with *grandis* (Castelnau); *striatipennis* (Macleay) with *denisonensis* (Castelnau); *punctatissima* (Macleay) with *laevis* (Castelnau); *amaroides* (Newman) with *decipiens* Westwood; *guttifera* (Castelnau) with *thouzeti* (Castelnau); *quadrua* Darlington with *quadrimaculata* (Macleay); *cordifer* (Blackburn) with *rockhamptonensis* (Castelnau); *colymbetoides* (Westwood) with *albopicta* (Newman); *spreta* (Blackburn) with *marginata* (Castelnau).

Following taxa have been newly described: *viridis, metallica, sedlaceki, tropicalis, similata, distinguenda, murrayana, glabrata, aberrans, communis, striatopunctata, interioris, polysetosa, punctata, lata, lustrans, minor, tolgae, darwini, tozeria, multiseta, coriacea, corrugata, spurgeoni, carinata, dalesi, acutangula, ochracea, parallela, sculpturata, multipunctata, dixoni, barbata, parva, politoides, pumila, sulcata, labralis, novaeguineae, transversalis, queenslandica, brandti, torresia, litterata, sternoincisa, tamborinae, wilgae, centroplagiata, impilosa, moorei, latiflava, inornata, thouzetoides, minima, cheesmannae, lyra, v-lineata, barbarae, quadriplagiata, versicolor, biclavata, monteithi, uniformis, flavopicea, centrolineata, territorialis, costalis, weiri, unicolor, pernigra, quadrata, storeyi, tropica, mjoebergi, incerta, longiplagiata, pilosa, brevistylia, uptoni, hermannsburgi, quadrilineata, signata, ruficollis, rhomboidalis, biguttata, meyeri, westralis, nigrina, flavomarginata, marginoides,* all spec. nov., and *mastersii proxima*, subspec. nov.

Lectotypes, and eventually paralectotypes, have been designated for the following species (including those names synonymized in present work): *grandis* (Castelnau), *vicina* (Castelnau), froggatti (Macleay), *mastersii* (Macleay), *boops* (Blackburn), *striatipennis* (Macleay), *obsoleta* (Macleay), *difficilis* (Blackburn), *dubia* (Castelnau), *semistriata* (Castelnau), *laevigata* (Castelnau), *ovalis* (Castelnau), *laevis* (Castelnau), *punctatissima* (Macleay), *polita* (Macleay), *striata* (Castelnau), *discoidalis* (Castelnau), *thouzeti* (Castelnau), *guttifera* (Castelnau), *castelnaui* (Reiche), *quadrisignata* (Castelnau), *bicolor* (Castelnau), *qua-*

drimaculata (Macleay), *brisbanensis* (Castelnau), *suturalis* Germar, *rufomarginata* (Macleay), *rockhamptonensis* (Castelnau), *cordifer* (Blackburn), *occidentalis* (Castelnau), *centralis* (Macleay), *colymbetoides* (Westwood), *biplagiata* (Castelnau), *bimaculata* (Castelnau), *picta* (Castelnau), *amabilis* (Castelnau), *ornata* (Macleay), *flavicollis* (Macleay), *marginata* (Castelnau), and *laticollis* (Macleay).

Additional four species remain doubtful, either because types are lost and they belong to species-groups, in which species distinction is impossible without comparison of type, or the type is so badly damaged, that the species cannot be grouped even into a species-group. These species are: *laticollis* (Macleay), *orectochiloides* (Hope), *fugax* (Westwood), and *tasmanica* (Castelnau).

Possible relationships of the species-groups are described in a cladogram based on a reconstructed phylogeny employing the methods proposed by Hennig. The phylogenetic status of the species is briefly discussed. The distribution of the species is described in maps. About 12 faunal areas (plus some additional subareas) can be distinguished with regard to distribution patterns of the species. Phylogenetic evidence shows that the southeastern faunal area contains the largest amount of plesiomorphic species, followed by the northeastern and tropical northern areas. In the far northern, northwestern, central western, southwestern, and central faunal areas, on the other hand, almost all species are more or less highly apomorphic.

From that pattern of distribution some ideas on the history of genus *Sphallomorpha* are derived. Most probably the genus originated in southeastern Australia, presumably in close relationship to eucalypts and perhaps also to ants. Although many species are relatively young, the diversity of characters within the genus is very high. Hence the origin of the genus and of many of its species-groups was probably rather old, but the main taxonomic radiation occurred perhaps as late as in Pleistocene, synchronous with the late taxonomic diversification of eucalypts during the same period. During Pleistocene several stocks of genus *Sphallomorpha* spread over most of Australia, mainly in an anti-clockwise, northern, then western, eventually southwestern direction. The repeated change of wet pluvials and dry interpluvials with their spreading of suitable plant communities (namely *Eucalyptus* forests or savannahs, in North Queensland, however, rain forests) and the subsequent isolation of these communities together with their Pseudomorphine hosts during Pleistocene, accounts for the high number of apomorphic species especially in the refugia of north Queensland, far Northern Territory, northwestern Australia, and central and southwestern Western Australia.

SPIXIANA

ZEITSCHRIFT FÜR ZOOLOGIE

(SPIXIANA – JOURNAL OF ZOOLOGY)

herausgegeben von der

ZOOLOGISCHEN STAATSSAMMLUNG MÜNCHEN

ISSN 0341-8391

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